

**DECLARATION OF GARY ROBERTS, D.D.S.**

I, Gary Roberts, under penalty of perjury, declare and state as follows:

1. I am over the age of 18, have personal knowledge of the facts and events referred to in this declaration, and am competent to testify to the matters stated below.
2. I am attaching a copy of my expert report in this matter as Attachment A, the contents of which are, to the best of my knowledge and belief, true and accurate. I hereby adopt and incorporate that report as if set forth fully herein.
3. I am qualified to provide expert testimony regarding wound ballistics and defensive uses of firearms in this matter. I am currently on staff in the Department of Surgery at Stanford University Medical Center, a level one trauma center, where I perform hospital dentistry and surgery, and am a licensed dentist in the state of California. At the hospital, among other duties, I treat various traumatic injuries, including gunshot wounds. I also own a private dental practice where I treat a variety of odontogenic and orofacial illnesses, as well as trauma related injuries, including reconstruction from gunshot wounds. While treating patients over the past 30 years, I have participated in the care of individuals who have suffered gunshot wounds from handguns, shotguns, rifles, and automatic weapons.
4. I was a U.S. Navy Reserve Officer from 1986–2008 (with active duty from 1988–1992). I graduated from the University of the Pacific dental school in 1988 and I completed my residency at U.S. Navy Hospital Oakland in 1989. In residency, I did rotations in anesthesia, emergency medicine, internal medicine, otolaryngology, as well as various dental specialties—concentrating on oral surgery, oral medicine, and diagnosis. I also received training in advanced trauma life support and combat casualty care. After I graduated from residency, I deployed overseas as a Battalion Dental Surgeon, performing dentistry and oral surgery; this included triaging and treatment of gunshot wounds.

5. During my military healthcare training, I became the U.S. Navy's Subject Matter Expert in wound ballistics and terminal ballistics. Terminal ballistics is the study of how a moving projectile behaves from the time it hits a target until it comes to rest. Wound ballistics is a subsection of terminal ballistics that focuses on the anatomic and physiological trauma caused by projectiles from the time they strike living tissue until they stop. I studied at the Army Wound Ballistics Research Laboratory at the Letterman Army Institute of Research while on active military duty. Thereafter I became one of the first members of the International Wound Ballistics Association. Over the course of my career, I have performed military, law enforcement, and privately funded wound ballistic testing and analysis, including being assigned to the U.S. Joint Service Wound Ballistic Integrated Product Team, serving as a consultant to the Joint FBIUSMC munitions testing program, as well as the DOD CTTSO-TSWG MURG program. Over the years, I have been a technical advisor to the Association of Firearms and Toolmark Examiners and to a variety of federal, state and municipal law enforcement agencies. I graduated from Police Academy and served as a Reserve Police Officer in the San Francisco Bay area. I am currently in a law enforcement training role where I provide consultations, lectures, and training materials on terminal ballistics and body armor to various law enforcement agencies around the country. My detailed CV is included in Attachment A. I am intimately familiar with the matters of my testimony, which is based upon external sources as well as my own experience. My opinions were not developed for purposes of any expert testimony.

6. I have been participated as an expert witness in terminal and wound ballistics in the Western District of New York [*New York State Rifle and Pistol Ass'n v. Cuomo*, No. 13-CV-291S]; in the Northern District of Illinois [*Friedman v. City of Highland Park*, No. 1:13-cv- 9073];

in the District of Maryland [*Kolbe v. O'Malley*, No. 1:13-cv-02841]; and in the Chancery Division of the Circuit Court of Cook County, Illinois [*Wilson v. Cook County*, No. 07 CH 4848].

7. Semiautomatic rifles mischaracterized and defined by Massachusetts as “assault weapons”, particularly those based on the AR-15 platform, are well suited for use in defense of self and home. Further, a limit on a magazine’s capacity may hinder defensive shooting effectiveness.

8. Based on my experience, training and research, semiautomatic rifles are among the best firearms for defensive shooting purposes for several reasons. First, semi-automatic rifles, like those based on the AR-15 platform, are the most ergonomic, safe, readily available, and effective firearm for civilian defensive shooting. Semiautomatic rifles like the AR15 offer superior accuracy, less recoil, greater effective range, faster reloading, reduced downrange hazard, better ergonomics, and a larger ammunition capacity than many other types of firearms, such as handguns and shotguns. In addition, they are generally easier to operate one-handed in case of injury compared to other shoulder fired weapons. It is also important to note that more American's have been trained to safely use AR15 type rifles than other weapon, as there are over 25 million American veterans who have been taught how to properly use an AR15 type rifle through their military training, not to mention in excess of 1 million American LE officers who have qualified on the AR15 over the last several decades. In addition, there are numerous civilian target shooters and hunters who routinely use AR15's and know how to safely operate them.

9. The FBI determined that the desired penetration depth into human tissue for defensive ammunition is 12 to 18 inches. Under-penetration or over-penetration reduces the ammunition's effectiveness at stopping a dangerous attacker. Appropriately selected center-fire ammunition fired from a semiautomatic rifle penetrates human tissue between 12 and 18 inches.

Therefore, it penetrates human tissue to the desired depth and can cause wounds that are more from semiautomatic rifles (.223 caliber Remington or 5.56 NATO, which are very similar) is more likely to incapacitate an attacker than ammunition fired from most handguns or birdshot from shotguns.

10. Properly selected ammunition fired from AR15 type semiautomatic rifles (.223 caliber Remington or the very similar 5.56 mm NATO) is more effective and reliable at stopping human attackers than typical handgun ammunition. Ammunition fired from semiautomatic rifles can reliably and rapidly stop hostile individuals who pose an immediate, life threatening danger and prevent them from continuing their violent actions than with handguns.

11. Because .223/5.56mm ammunition fired from an accurate and ergonomic semiautomatic rifle like the AR15 has a high potential to hit the desired target and is less likely to over-penetrate the target, using semiautomatic rifles can prove safer than using other types of firearms. Accurate and effective ammunition can reduce the need for multiple shots, decreasing the chance of shots missing the intended hostile opponent and striking innocent bystanders. Also, as proven by numerous tests, including those by the FBI and BATFE, .223/5.56mm ammunition fired from a semiautomatic rifle is less likely to over-penetrate human tissue or intermediate barriers and then pose a hazard to innocent bystanders compared to ammunition fired from many other types of firearms, such as handguns and those commonly used for hunting.

12. I have seen and/or treated patients with gunshot wounds from rifles (including those banned under the Challenged Laws), handguns, and shotguns. Projectiles fired by common hunting weapons, frequently create more tissue damage than that caused by the Massachusetts banned Enumerated Firearms. Likewise, ammunition fired from many handguns has a greater potential of over-penetrating than .223/5.56 mm ammunition from a semiautomatic rifle like an AR15.

13. It is often times more time consuming and complex for healthcare providers to repair multiple gunshot wounds. Use of an accurate semiautomatic rifle in a defensive encounter can result in the need to fire less shots. Handguns are less effective at stopping attackers and so more gunshots are often needed to end an encounter. Additionally, shotguns release multiple projectiles with each pull of the trigger, increasing the likelihood of multiple wounds. Therefore, the use of consistent, reliable, and effective defensive ammunition (for example, .223/5.56mm fired from a semiautomatic rifle) may reduce the number of gunshot wounds, thereby potentially limiting the amount of surgical intervention needed to control hemorrhage and repair injuries. Reducing the number of rounds expended in a defensive shooting encounter also reduces the risk that an innocent bystander is unintentionally hit by a stray bullet.

14. To conclude that semiautomatic rifles are well-suited for defensive shooting, one need look no further than the fact that the AR15 is the most commonly used and recommended rifles by law enforcement personnel, who may lawfully discharge their firearms for defensive purposes only. In fact, over one million law enforcement personnel have qualified on the AR-15. It follows that private citizens who wish to own a firearm for self- and home-defense should use a semiautomatic rifle—most likely the same firearm and ammunition chosen by police in their community. This is because the degree of force required to stop a violent felon does not change whether confronted by law enforcement officers or a private citizen. The violent felon's anatomy, physiology, and incapacitation potential does not change depending on the intended victim's profession.

15. A limit on magazine capacity may hinder defensive shooting. Oftentimes, defensive shooting requires more than 10 rounds of ammunition, even for trained law enforcement officers. The most recently released New York Police Department (NYPD) "Annual

Firearms Discharge Report" data from 2015 documents that in 35% of NYPD Intentional Discharge-Adversarial Conflict cases, officers needed to fire more than 5 shots to stop the threat. (A true and accurate copy of the Annual Firearms Discharge Report is attached hereto as Attachment B). In 17% of the incidents, officers needed more than 10 shots to end the violent encounter, including one case where 84 shots were required. It stands to reason that civilians who, unlike NYPD police officers, likely have no body armor, no radio, no partner, no cover units, and no duty belt with extra magazines, yet who are targets of opportunity being confronted by the same violent felons as the police, need at least as many rounds of ammunition in their magazines as trained police officers. Individuals with disabilities may have difficulty easily changing magazines, so having a magazine with standard capacity greater than 10 rounds may be crucial to their survival in a lethal force defensive encounter. Furthermore, I am unaware of any person who has had to use lethal force to defend their life in a gunfight who wishes they had less ammunition during the encounter.

16. Additionally, the most commonly-used magazines by civilians hold more than 10 rounds of ammunition. According to data from the BATFE, the majority of pistols (approximately 62%) currently manufactured each year in the U.S. are designed to use magazines with a standard capacity (the number of cartridges the firearm was designed to operate with) greater than 10 rounds. Numerous tests by law enforcement organizations have documented that the most reliable magazines are those the weapon was originally designed to use; both high capacity and reduced capacity magazines have frequently demonstrated more malfunctions in various types of firearms. The U.S. military has not adopted a handgun with a standard magazine capacity less than 10 rounds since 1911. Likewise, all U.S. military rifles that have been adopted since 1937 have a magazine capacity of 15 or more rounds. By capriciously

limiting magazine capacity to 10 rounds or less, the government denies citizens the benefits of modern technology and forces them to use defensive tools from a bygone era.

I declare under penalty of perjury that the foregoing is true and correct.



12/12/17

---

Gary Roberts, D.D.S.

---

Date

**EXPERT REPORT OF GARY ROBERTS**

Gary K. Roberts, DDS

750 Welch Road

Suite 118

Palo Alto, CA 94304

(650) 328-6684

September 15, 2017

I studied wound and terminal ballistics at the Army Wound Ballistics Research Laboratory at the Letterman Army Institute of Research while on active military duty. I thereafter became one of the first members of the International Wound Ballistics Association. Since that time, I have performed military, law enforcement and privately funded wound ballistic testing and analysis. As a U.S. Navy Reserve Officer from 1986 to 2008, I served on the Joint Service Wound Ballistic Integrated Product Team and served as a consultant to the Joint FBI-USMC munitions testing program. Over the years, I have been a technical advisor to the Association of Firearms and Toolmark Examiners and to a variety of federal, state and municipal law enforcement agencies. I also served as a Reserve Police Officer in the San Francisco Bay area and I currently serve in a law enforcement training role. I am currently on staff at Stanford University Medical Center, a large teaching hospital and Level I Trauma Center, where I perform hospital dentistry and surgery.

I have reviewed the relevant Massachusetts Statutes constituting bans on semiautomatic rifles and large capacity magazines; the Massachusetts Attorney General's Notice of Enforcement dated July 20, 2016; the interrogatory answers of Attorney General Maura Healey, Secretary of the Executive Office of Public Safety and Security Daniel Bennett, and Superintendent of the Massachusetts State Police Colonel Richard McKeon; and guiding information from the Massachusetts Attorney General's website providing additional answers and information on permissible and impermissible firearms.

#### **DEFENSIVE MUNITION REQUIREMENTS**

**Civilian citizens should use the same munitions chosen by police in their community, as the lethal force requirements are identical and the anatomy, physiology, and incapacitation potential of a violent felon does not suddenly change whether confronted by law enforcement officers or private citizens.**

All projectiles discharged by firearms have the capacity to kill. None are more "lethal" than others. If person is shot with a projectile that can penetrate into the body, it has the capacity to kill and deadly force has been applied. The hype created by the entertainment industry and media has led the general public to be ignorant of the true mechanics of wound ballistics.<sup>1</sup> When law enforcement (LE) agencies select munitions intended for potential lethal force use, the primary requirement is to choose ammunition that can

---

<sup>1</sup> To assist the reader, I have included an Introduction to Terminal Ballistics and Basic Wound Ballistic Facts as Appendix A to this report. Reference to this short primer on the science of terminal ballistics will be invaluable in helping the reader develop a fuller understanding of terminal ballistics (the study of projectile behavior from the time the first target is hit until the projectile stops moving) while simultaneously divorcing the actual scientific and medical realities of gunshot wounds and bullet mechanics from the ignorant and simply inaccurate depictions found in entertainment media and modern politics.

reliably rapidly incapacitate and stop hostile individuals who pose an immediate life threatening danger to public safety and prevent them from continuing their violent actions.

There is a significant difference between many of the most common civilian hunting munitions and those used by law enforcement—the civilian ammunition is generally substantially more powerful and destructive than almost all small arms munitions in common police use. The most commonly-used LE handguns in service calibers like 9 mm, .40 S&W, and .45 Auto are far less powerful than typical hunting handguns firing deep penetrating magnum calibers like the .357 Mag, .41 Mag, .44 Mag, .460 S&W Mag, and .500 S&W Mag. Likewise, police AR15's firing relatively weak .223/5.56 mm ammunition are quite anemic in penetration capability and pale in destructive capacity when compared to common civilian hunting rifles firing calibers like .260 Rem, .270 Win, 7 mm Mag, .30-06, .300 Mag, .338 Mag, .375 H&H, 416 Rigby, .458 Lott, and .500 Nitro. Even hunting rifles in older calibers from the 1800's, like .30-30 and .45-70, penetrate much deeper and are far more damaging than the .223/5.56 mm ammunition fired by the AR15 carbines generally used by police. The only common LE weapon that approaches the destructive capability of civilian hunting firearms are 12 gauge shotguns, however police shotgun ammunition almost always uses the weaker 2 3/4" shells, while many civilian hunting shotguns use the more powerful 3" and 3 1/2" magnum shotgun loads. Any of the civilian handgun, rifle, or shotgun calibers that are commonly used to hunt feral hogs, deer, elk, moose, bear, etc. will prove far more penetrative and destructive than most of the typical police handgun or carbine loads.

Almost all modern law enforcement ammunition is engineered to meet FBI guidelines of penetrating no less than 12" and no more than 18". In addition, LE ammunition is designed to be blind to barriers--in other words to consistently perform the same, whether a shot is unobstructed or first has to go through an intermediate barrier like an automobile windshield, vehicle door, or structural materials (*ex. a wall or door in a building, as well as window glass*). If a member of the public is sadly forced to use lethal force to defend themselves, their family, or other innocent citizens, the requirements for lethal force munitions are EXACTLY the same as needed by the police in such a horrible eventuality--to quickly stop the violent criminal without endangering other innocent people. In fact, it would likely be prudent and wise for a legally armed citizen to seek out the same tested and proven arms and munitions that are used by police in order to have the greatest chance of safely and successfully surviving a lethal force encounter.

In many respects, the use of the most capable defensive ammunition available is more humane, as accurate and effective munitions can reduce the need for multiple shots--decreasing the chance of shots missing the intended hostile opponent and striking innocent bystanders. The use of properly designed and manufactured defensive ammunition also reduces the potential of innocent bystanders getting hit by projectiles that first perforate the violent attacker. Often times it is more difficult, time consuming, and complex for healthcare providers to repair multiple gunshot wounds; thus the use of consistent, reliable, and effective defensive ammunition may reduce the number of times a dangerous opponent must be shot in order to rapidly stop their assault, thereby

potentially limiting the amount of surgical intervention needed to control hemorrhage and repair injuries.

### **MAGAZINE CAPACITY**

**The public should NEVER be limited to magazines of less capacity than that authorized for police in their community. Any artificial limitations on magazine capacity imposed by the government represents an unjust and illogical interference on a civilian's ability to defend himself or herself from assailants.**

A standard capacity magazine is one containing the number of cartridges the firearm was designed to operate with: typically 15-17 rounds in 9 mm, 15 rounds in .40 S&W, 7-13 rounds in .45 ACP, 20-30 rounds in 5.56 mm, and 20 rounds in .308. High capacity magazines and feeding devices are those holding more cartridges than the weapon was originally designed to use; low capacity magazines are those whose capacity is artificially reduced from that which the firearm was originally designed to use. Numerous tests by LE and military entities have documented that the most reliable magazines are those the weapon was originally designed to use; both high capacity and reduced capacity magazines have frequently demonstrated more malfunctions in various types of firearms.

According to data from the Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF), the majority of pistols (approximately 62%) currently manufactured each year in the U.S. are designed to use magazines with a standard capacity greater than 10 rounds. The U.S. military has not adopted a handgun with a standard magazine capacity less than 10 rounds since 1911. Likewise, all U.S. military rifles that have been adopted since 1937 have a magazine capacity of 15 or more rounds. By capriciously limiting magazine capacity to 10 rounds or less, the government would deny citizens the benefits of modern technology and force them to use defensive tools from a bygone era. It is like forcing citizens to go back to driving the Model-T Ford because current automobiles are too fast and result in too many traffic deaths each year.

The most recently released New York Police Department (NYPD) "Annual Firearms Discharge Report" data from 2015 documents that in 65% of NYPD Intentional Discharge-Adversarial Conflict (ID-AC) incidents an officer fired 1 shot or less, while in 35% of cases officers needed to fire more than 5 shots to stop the threat. Interestingly in 17% of the incidents, more than 10 shots were required to end the violent encounter. Of the higher round count incidents, one case required 84 shots to stop the threat. Thus in 2015, NYPD officers needed between 1 and 84 shots to end violent threats.

*When law enforcement ID-AC incidents are looked at in aggregate over a multi-year period, approximately a third of the time only 1 shot will be needed to stop the threat, in nearly half of the cases 2-10 shots will be needed, unfortunately 10+ shots may be necessary to end up to 20% of violent encounters.*

So if police officers need more than 10 shots to stop violent attackers approximately 1/5 of the time, why would innocent civilians who likely have no body armor, no radio, no partner, no cover units, no less lethal options, no duty belt with extra magazines, yet who are being confronted by the same violent felons as the police, need less ammunition than police officers? What about citizens with disabilities that may prevent their escape or avoidance of a threat and severely limit their ability to rapidly and effectively reload a firearm? I am unaware of any person who has had to use lethal force to defend their life in a gunfight who wishes they had less ammunition during the encounter. By arbitrarily restricting magazine capacity for civilians to 10 rounds, the most current NYPD ID-AC data suggests that in approximately one out of every five violent encounters civilians would similarly run out of ammunition before the violent encounter has ended.

Given that all LE agency shooting incidents are defensive in nature and that virtually all LE agencies issue handgun magazines of greater capacity than 10 rounds and rifle magazines of 20-30 rounds, it seems obvious that LE experts have concluded that magazines with capacities greater than 10 rounds are the best choice for defensive shooting incidents.

#### **FIREARMS FOR SELF-DEFENSE**

**The semi-automatic AR15 carbine is likely the most ergonomic, safe, readily available and effective firearm for civilian self-defense and law enforcement general purpose use.**

There are multiple factors that will play a role in determining which weapon might be the best choice for self-defense. Handguns are compact and easily carried, but generally offer poor incapacitation potential and are harder to shoot accurately compared to shoulder fired weapons. In contrast to handgun caliber weapons, virtually any shoulder fired firearm chambered in a center fire rifle caliber or using 12 gauge shotgun ammunition will prove superior from a both a wound ballistic and practical accuracy standpoint. Special Agent Urey Patrick of the FBI Firearms Training Unit wrote the following to emphasize this point:

*“...no law enforcement officer should ever plan to meet an expected attack armed only with a handgun. Experienced officers implicitly recognize...when potential violence is reasonably anticipated their preparations are characterized by obtaining as many shoulder (fired) weapons as possible.”*

**If at all possible, civilians forced to defend themselves with a firearm should heed this advice and select a shoulder-fired weapon in an effective caliber whenever circumstances allow this option.**

The question then becomes which shoulder fired weapon is optimum for self-defense. In America's past, common shoulder fired weapons for home defense included muskets like the ubiquitous "Brown Bess" from the time of our Nation's founding, the Winchester

lever action repeating rifle from the days of the Western Frontier, and a variety of shotguns. Until recently, the 12 gauge shotgun has remained the universally accepted shoulder fired weapon for United States law enforcement use. A close range hit from a 12 gauge shotgun using buckshot will create more tissue damage than most other commonly used LE firearms. Unfortunately, shotguns are not an ideal weapon due to their short effective range, imprecise accuracy, potential downrange hazard to innocent bystanders from stray pellets, possible excessive penetration, small ammunition capacity, slow reloading, difficult manual of arms, poor ergonomics, and harsh recoil. Recognition of the shotgun's significant limitations have prompted many American law enforcement agencies to adopt the more versatile semi-automatic magazine fed carbine. Semi-automatic carbines offer superior accuracy, less recoil, greater effective range, faster reloading, potentially reduced downrange hazard, better ergonomics, and a larger ammunition capacity than the traditional shotgun. In addition, semi-automatic carbines are generally easier to operate one handed in case of injury, when holding a child, or when using a communication device to dial 911 on a telephone or talk with a dispatcher via radio. Currently, the most common carbine in LE use is the .223/5.56 mm AR15.

Recently many in the media and politics have focused their ire on the AR15 and vilified it as an "assault weapon" only good for killing people. This is both inaccurate and unfortunate. The AR15 is the semi-automatic civilian sporting version of the select-fire M16 rifle and M4 carbine used by the U.S. military and many LE agencies. If the civilian legal, semi-automatic AR15 is only a dangerous and unusual offensive weapon of war, with no legitimate hunting, sporting, or self-defense purpose, good only for producing mass mayhem, and not in common use by law abiding citizens for lawful purposes as some uninformed individuals have claimed, why is it that AR15 rifles have consistently been used by winning competitors for the past quarter of a century at the U.S. Civilian Marksmanship National Match target shooting championships held each year at Camp Perry, Ohio? Why have AR15's become one of the most popular hunting rifles for harvesting a wide variety of game, including varmints, feral hog, deer, and even elk? Why are AR15's the most commonly used and recommended rifles for defensive use by LE personnel? Aren't target shooters, hunters, and police officers law abiding citizens engaged in lawful pursuits?

According to experts such as the U.S. military, the Association of Firearms and Toolmark Examiners (AFTE), and the Smithsonian Museum, for a weapon to be labeled an "Assault Rifle", it must have the following specific physical and performance characteristics:

- Shoulder Fired Carbine
- Uses an Intermediate Cartridge
- Fires from a Closed Bolt
- Magazine with Capacity of at least 20 rounds
- Offers Select Fire Capability (*i.e. can fire multiple shots per each trigger pull*)

The civilian legal, semi-automatic AR15 does NOT meet these criteria, as it is NOT select-fire and, despite misleading statements to the contrary, it cannot easily be modified

to be so. As a result of their select fire capability, true assault rifles like the M16 and M4 are severely restricted and effectively banned for routine civilian ownership by the National Firearms Act of 1934, the Gun Control Act of 1968, and the Firearm Owners' Protection Act of 1986. Some glib persons have stated that semi-automatic weapons like the AR15 can be shot at rates of fire making them virtually indistinguishable from machine guns; clearly this is ludicrous, as the U.S. military has documented that the average rate of accurate semi-automatic fire from an AR15 type rifle is approximately 45-90 RPM, while select-fire M16 rifles or M4 carbines shoot at 700-970 RPM—a quite profound and obvious difference.

Likewise many individuals have decried the standard capacity 30 round magazine used in the AR15 (*which typically fires .22"/5.56 mm projectiles*), while absurdly championing the idea that the 12 gauge pump action shotgun with a 5 round capacity is more suitable for civilian self-defense purposes—this is illogical on many levels. Keep in mind that EACH typical 2 3/4" 12 gauge #4 buckshot shell contains up to thirty-four .24"/6.1 mm diameter pellets. Thus each pull of the pump-action shotgun trigger launches as many projectiles as firing an entire 30 round AR15 magazine; emptying the 5 round shotgun magazine launches as many projectiles as completely firing FIVE 30 round AR15 magazines.

In the past two decades, a new term has joined the popular lexicon: “Assault Weapon”. The term “assault weapon” is a vague, inaccurate misnomer, and is not synonymous with “assault rifle”. The term “assault weapon” appears to arbitrarily be based on the appearance of a firearm and not specific functional or performance parameters. Any civilian firearm which has the appearance of a military weapon, such as a detachable magazine, magazine with a standard capacity of 20+ rounds, flash hider, bayonet lug, pistol grip, adjustable stock, or black synthetic furniture is often arbitrarily referred to as an “assault weapon” by ignorant individuals, as well as by politicians and media personalities attempting to sway public opinion. Many mendacious commentators have decried these “military features” as only being useful for combat and criminal applications, but unnecessary for self-defense or sporting purposes. Obviously this is utterly inaccurate, as features like adjustable stocks, muzzle devices, and free float rails are commonly in use on precision target firearms used for competition, as well as on LE rifles intended for self-defense use, as they increase accuracy and improve ergonomics. Some areas also have laws codifying various firearms as so-called “assault weapons”. This is illogical, confusing, and bizarre, as two firearms can exhibit identical performance parameters: the same caliber, same magazine capacity, and same rate of fire, but one is classified as an “assault weapon” and the other is not.

If assault weapons are, “*the weapons of choice among drug dealers, criminal gangs, hate groups, and mentally deranged persons bent on mass murder*,”<sup>2</sup> why do almost all major U.S. law enforcement agencies, including the FBI, recommend “assault weapons” like the AR15 for lawful defensive purposes? If “assault weapons” are so profligate and dangerous as alleged by some commentators, why do the FBI Uniform Crime Reports (UCR) document that, per year, more people are feloniously killed by blunt objects such

---

<sup>2</sup> H.R. Rep. No. 103-489, at 13 (1994).

as hammers than by rifles of ALL types, let alone rifles spuriously classified as “assault weapons”?

True military assault rifles, as well as civilian firearms disingenuously labeled as “assault weapons” based on physical appearance rather than functional characteristics, do not inflict wounds of any greater severity than those produced by traditional rifles that do not possess the safety and accuracy enhancing features found on many banned firearms. In addition, wounds caused by common civilian hunting rifles and shotguns like those in use for the past 150 years or so are typically far more severe and destructive to tissue than many so-called “assault weapons.”

The roots of the .223/5.56 mm cartridge commonly used in the AR15 come from a caliber designed for small game varmint hunting and used to eliminate small rodents and animals up to coyote size. Many hunters avoid it for medium size, 100 + pound game; in fact in numerous states it is prohibited to hunt deer size game with the .223/5.56 mm. 5.56 mm 55 gr M193 Full Metal Jacket (FMJ) fired from 20" barrel M16A1 rifles was the standard U.S. military 5.56 mm ammunition in the 1960's and 1970's. Dr. Martin Fackler, a leading expert on the 5.56 mm 55 gr M193 FMJ, has written the following about 55 gr FMJ:

*“In 1980, I treated a soldier shot accidentally with an M16 M193 bullet from a distance of about ten feet. The bullet entered his left thigh and traveled obliquely upward. It exited after passing through about 11 inches of muscle. The man walked in to my clinic with no limp whatsoever: the entrance and exit holes were about 4 mm across, and punctate. X-ray films showed intact bones, no bullet fragments, and no evidence of significant tissue disruption caused by the bullet's temporary cavity. The bullet path passed well lateral to the femoral vessels. He was back on duty in a few days. Devastating? Hardly. The wound profile of the M193 bullet (page 29 of the Emergency War Surgery—NATO Handbook, GPO, Washington, D.C., 1988) shows that most often the bullet travels about five inches through flesh before beginning significant yaw. But about 15% of the time, it travels much farther than that before yawing—in which case it causes even milder wounds, if it missed bones, guts, lung, and major blood vessels. In my experience and research, at least as many M16 users in Vietnam concluded that it produced unacceptably minimal, rather than “massive”, wounds. After viewing the wound profile, recall that the Vietnamese were small people, and generally very slim. Many M16 bullets passed through their torsos traveling mostly point forward, and caused minimal damage. Most shots piercing an extremity, even in the heavier-built Americans, unless they hit bone, caused no more damage than a 22 caliber rimfire bullet.”<sup>3</sup>*

During defensive shooting encounters, shots that inadvertently miss the intended target in Close Quarters Combat and urban environments can place innocent citizens in danger. In general, .223/5.56 mm bullets demonstrate LESS penetration after passing through building structural materials than other common LE and civilian calibers. All of the .223/5.56mm bullets recommended for law enforcement use offer reduced downrange

---

<sup>3</sup> Fackler, ML: “Literature Review”. Wound Ballistics Review; 5(2):40, Fall 2001.

penetration hazards, resulting in less potential risk of injuring innocent citizens and reduced risk of civil litigation in situations where bullets miss their intended target and enter or exit structures compared with common handgun bullets, traditional hunting rifle ammunition, and defensive shotgun projectiles (*buckshot and slugs*). When comparing issued handgun, shotgun, and rifle ammunition, the FBI has explicitly stated that the .223/5.56 mm ammunition used in the AR15 was the only caliber that offered ideal penetration of 12-18" in all test events, that the issued .223/5.56 mm loading had no over-penetration issues compared with the other service caliber handgun, shotgun, and rifle ammunition tested, and that .223/5.56 mm was more consistent in performance than all the other calibers. This is in sharp contrast to, and completely refutes, the false claims that the .223/5.56 mm ammunition used in AR15's increases the threat of stray bullets harming innocent family members, neighbors, and passersby.

As a result of the M16 FOW (Family of Weapons) being used by the U.S. military for nearly 50 years, perhaps more Americans have been trained to safely operate the AR15 than any other firearm. There are approximately 25 million American veterans who have been taught how to properly use an AR15 type rifle through their military training, not to mention in excess of 1 million American LE officers who have qualified on the AR15 over the last several decades. In addition, there are numerous civilian target shooters and hunters who routinely use AR15's. Since so few military service members, particularly those not on active duty, get enough training and practice with their M16 or M4 service rifle, many military Reservists and National Guard personnel, as well as some active duty service members, have purchased civilian AR15's in order to train and practice on their own time with a rifle offering similar ergonomics and operating controls as the service weapon they are issued in the military. In many ways, the AR15 is the ubiquitous "Brown Bess" musket or Winchester repeating rifle of the modern era—a true firearm for the people. The AR15 is a highly versatile design that can be adapted for military, law enforcement, civilian self-defense, hunting, target shooting, and other sporting purposes.

I am charging \$700 per hour for my services.



---

Gary K. Roberts, D.D.S.

## APPENDIX A

### INTRODUCTION to TERMINAL BALLISTICS

Gunshot wounds are an unfortunate fact in our world. Due to the large number of gunshot wounds which occur during military conflicts and the frequency of civilian gunshot wounds in large urban areas, the common assumption is that firearms injuries are well understood and that health care providers have gained the necessary knowledge and skill to appropriately treat gunshot wounds. Unfortunately, this assumption is incorrect. Probably no scientific or medical field contains more misinformation than wound ballistics.

Numerous "war stories" and a great deal of folklore exist about gunshot wounds, but the actual effects of bullets on the human body remain shrouded in mystery to the average person. An overwhelming volume of conflicting and contradictory articles written about firearms wounds have been published in medical journals, law enforcement publications, military briefings, and civilian articles. Sadly, while many of these texts propose theories which purport to explain the effects of penetrating projectiles on the body, the majority are replete with erroneous assumptions and pseudoscientific speculation which result in further misunderstanding. In addition, many of the myths and misconceptions about bullet wounds are perpetuated by inaccurate entertainment industry portrayals on television shows and at the cinema, and by distorted exaggerations of weapons effects in news media accounts of shootings.

Internal ballistics is the study of projectile behavior from the time the cartridge is fired and propellant ignited, until the bullet exits the barrel of the firearm. External ballistics is the study of projectile flight through air after exiting the barrel of the firearm, until a target or object is hit. Terminal ballistics is the study of projectile behavior from the time the first target, intermediate barrier, or object is hit, until the projectile stops moving. Wound ballistics is the branch of terminal ballistics that studies the interaction between penetrating projectiles and tissue; essentially the pathophysiology of gunshot wounds. This is of crucial importance to the healthcare provider who must treat gunshot wounds, as a poor understanding of the types of injuries produced by penetrating projectiles may result in improper or inadequate clinical treatment being provided to a shooting victim. Terminal ballistics and wound ballistics are also of interest to military and law enforcement personnel as well as private citizens who depend on firearms to protect themselves since misconceptions regarding bullet effectiveness and body armor can jeopardize their lives and those of innocent individuals they are protecting.

### BASIC WOUND BALLISTIC FACTS

The last 25 years of modern wound ballistic research has demonstrated yet again what historical reports have always indicated--that there are only two valid methods of incapacitation: one based on psychological factors and the other physiological damage.

People are often rapidly psychologically incapacitated by minor wounds that are not immediately physiologically incapacitating. Preconceived notions of how people should react when shot; intimidation from the weapon or act of being shot; fear of pain, injury, or death; anxiety about the appearance of their wound and the sight of their own blood; or a lack of will to continue and a desire to quit can all influence an individual's response to being shot. Up to fifty percent of those individuals rapidly incapacitated by bullet wounds are probably incapacitated for psychological rather than physiological reasons. Psychological factors are also the reason people can receive severe, even non-survivable wounds and continue functioning for short periods of time. Since pain is often initially absent following injury, an individual may not be aware of their wound and therefore will not react to it. Strong emotions such as anger, rage, hate, and basic survival instincts that release adrenalin, can stimulate the body. Chemicals can strongly influence an individual's psychological state. People under the influence of analgesics, stimulants, tranquilizers, or dissociative agents may not be aware of their injury, may have decreased pain perception, or may show no concern about their wound. Psychological incapacitation is an extremely erratic, highly variable, and completely unpredictable human response, independent of any inherent characteristics of a particular projectile.

On the other hand, the degree and rapidity of any physiological incapacitation is determined by the anatomic structures the projectile disrupts and the severity of the tissue damage caused by the bullet. Physiologically, immediate incapacitation or death can only occur when the brain or upper spinal cord is damaged or destroyed. The tactical reality is that in OIS (*officer involved shooting*) incidents, opportunities for LE (*law enforcement*) personnel to take precisely aimed shots at the CNS (*central nervous system*) of threatening opponents is rare due to high stress unexpected contact marked by rapid fleeting movements, along with frequent poor visibility of the target caused by darkness, innocent bystanders, and the use of cover and concealment. Battlefield conditions for military personnel can be even more chaotic. Likewise, civilian self-defense encounters can be highly stressful and confusing. Thus there is a reduced likelihood of routine CNS targeting in defensive encounters requiring lethal force. Absent CNS damage, circulatory system collapse from severe disruption of the vital organs and blood vessels in the torso is the only other reliable method of physiological incapacitation from small arms. If the CNS is uninjured, physiological incapacitation is delayed until blood loss is sufficient to deprive the brain of oxygen. Multiple hits may be needed before an individual is physiologically incapacitated. An individual wounded in any area of the body other than the CNS may physiologically be able to continue their actions for a short period of time, even with non-survivable injuries. In a 1992 IWBA Journal paper, Dr. Ken Newgard wrote the following about how blood loss effects incapacitation:

*"A 70 kg male has a cardiac output of around 5.5 liters per minute. His blood volume is about 4200 cc. Assuming that his cardiac output can double under stress, his aortic blood flow can reach 11 Liters per minute. If this male had his thoracic aorta totally severed, it would take him 4.6 seconds to lose 20% of his total blood volume. This is the minimum amount of time in which a person could lose 20% of his blood volume from one point of injury. A marginally trained person can fire at a rate of two shots per second. In 4.6*

*seconds there could easily be 9 shots of return fire before the assailant's activity is neutralized. Note this analysis does not account for oxygen contained in the blood already perusing the brain that will keep the brain functioning for an even longer period of time."*

LE personnel are generally trained to shoot at the center of mass, usually the torso, of an aggressive opponent who must be stopped through the use of lethal force. While the human body can appear incredibly complex and frail, it is also remarkably robust and durable, with the capacity to withstand severe stress and damage before being incapacitated. Physiological incapacitation with wounds to the torso is usually the result of circulatory system collapse. More rapid incapacitation may occur with greater tissue disruption. Tissue is damaged through two wounding mechanisms: the tissue in the projectile's path is permanently crushed and the tissue surrounding the projectile's path is temporarily stretched. A penetrating projectile physically crushes and destroys tissue as it cuts its path through the body. The space occupied by this pulped and disintegrated tissue is referred to as the permanent cavity. The permanent cavity, or wound track, can quite simply be considered as the hole bored by the projectile's passage. Obviously, bullets of greater diameter crush more tissue, forming a larger permanent cavity. The formation of this permanent cavity is consistent and reliable.

The tissue surrounding the permanent cavity is briefly pushed laterally aside as it is centrifugally driven radially outward by the projectile's passage. The empty space normally occupied by the momentarily displaced tissue surrounding the wound track is called the temporary cavity. The temporary cavity quickly subsides as the elastic recoil of the stretched tissue returns it towards the wound track. The tissue that was stretched by the temporary cavity may be injured and is analogous to an area of blunt trauma surrounding the permanent crush cavity. The degree of injury produced by temporary cavitation is quite variable, erratic, and highly dependent on anatomic and physiologic considerations. Many flexible, elastic soft tissues such as muscle, bowel wall, skin, blood vessels, and empty hollow organs (*stomach, intestines, bladder, etc...*) are good energy absorbers and are highly resistant to the blunt trauma and contusion caused by the stretch of temporary cavitation. Inelastic tissues such as the liver, kidney, spleen, pancreas, brain, and completely full fluid or gas filled hollow organs are highly susceptible to severe permanent splitting, tearing, and rupture due to temporary cavitation insults. Projectiles are traveling at their maximum velocity when they initially strike and then slow as they travel through tissue. In spite of this, the maximum temporary cavity is not always found at the surface where the projectile is at its highest velocity, but often deeper in the tissue after it has slowed considerably. The maximum temporary cavitation is usually coincidental with that of maximum bullet yaw, deformation, or hyper-expansion and fragmentation, but not necessarily maximum projectile velocity.

All projectiles that penetrate the body can only disrupt tissue by these two wounding mechanisms: the localized crushing of tissue in the bullet's path and the transient stretching of tissue adjacent to the wound track. Projectile wounds differ in the amount and location of crushed and stretched tissue. The relative contribution by each of these mechanisms to any wound depends on the physical characteristics of the projectile, its

size, weight, shape, construction, and velocity, penetration depth and the type of tissue with which the projectile interacts. Unlike rifle bullets, handgun bullets, regardless of whether they are fired from pistols or SMG's (*sub-machine gun*), generally only disrupt tissue by the crush mechanism. In addition, temporary cavitation from most handgun bullets does not reliably damage tissue and is not usually a significant mechanism of wounding.

Vital anatomic structures are located deep within the body, protected by various layers of tissue. The average thickness of an adult human torso is 9.4" and the major blood vessels in the torso of even a slender adult are located approximately 6" from the ventral skin surface. Bullets that may be required to incapacitate aggressors must reliably penetrate a minimum of approximately 10 to 12 inches of tissue in order to ensure disruption of the major organs and blood vessels in the torso from any angle and through excessive adipose tissue, hypertrophied muscle, or intervening anatomic structures, such as a raised arm. The FBI has defined the ideal penetration range for projectiles intended for LE use to be 12-18", thus ensuring adequate penetration, while limiting the chance of projectiles exiting a violent aggressor and going downrange to hit an innocent bystander. Bullet penetration depth varies depending on the density and resistance of the tissue encountered. Bullets striking dense structures such as bone have reduced penetration while those traveling through less resistant tissue, such as lung, exhibit increased penetration. The tough, resilient, flexible skin on the exit side of the body can have the same resistance to bullet passage as four inches of muscle and often causes bullets to end their path just under the skin at the anticipated exit point.

All other factors being equal, heavier bullets penetrate to a deeper depth in tissue than lighter bullets and non-deforming bullets generally penetrate deeper than deforming bullets. Non-deforming projectiles exhibit greater penetration as velocity is increased. Higher velocity also increases the penetration depth of deforming bullets, but only until the bullet begins to upset. The higher velocity then increases the amount and rate of bullet deformation, with the enlarged frontal area of the expanded bullet causing increased resistance to further penetration and a decreased total penetration depth. Projectiles that become destabilized after leaving the muzzle have greater yaw angles in flight and therefore greater AOA (*angle-of-attack*) on impact. AOA at impact refers to the angle between the flight axis of the projectile and the geometric axis of the projectile at the moment of impact. This results in decreased tissue penetration compared to the same bullet when properly stabilized. Decreased projectile penetration can also result if the bullet is deformed or fragmented after passing through intermediate obstacles, for example automobile windshields or sheet metal, before striking tissue. Penetration depth can be increased if an expanding bullet fails to deform, either through poor bullet design or external influences. For example, if the hollow nose cavity of a JHP (*jacketed hollow point*) bullet collapses in on itself after passing through intermediate obstacles such as automobile steel or if the hollow point becomes clogged with material from intermediate obstacles like wood or heavy clothing, it may be prevented from expanding and will behave like a deeper penetrating, non-deforming bullet.

Aerodynamic projectiles, such as bullets, cause minimal tissue disturbance when passing point forward through tissue. Tissue is a denser medium than air; as the bullet strikes tissue, the increased drag on the projectile overcomes its rotational stabilization and the bullet can upset and yaw. If the bullet yaws, more surface area is in contact with tissue, so it crushes more tissue, creating a larger permanent cavity. When a bullet yaws, it also displaces more of the surrounding tissue, increasing the temporary cavity size. Both the largest permanent and temporary cavities are produced by a non-deforming projectile when it is traveling sideways at 90 degrees of yaw, allowing the maximum lateral cross sectional area of the bullet to strike tissue and displace the greatest amount of tissue. Longer and wider bullets have a greater lateral cross sectional area and thus create a larger permanent cavity when they yaw. The depth in tissue at which a given bullet upsets is independent of bullet mass and velocity, and is strongly influenced by the AOA at which the bullet strikes tissue, as well as the projectile shape, construction, and center of gravity. All non-deforming, pointed tip Spitzer type projectiles, such as the FMJ (*full metal jacketed*) rifle bullets commonly used by militaries, yaw past 90 degrees in tissue, finally ending their path pointed backwards, their bases facing the direction of travel, as this is the most stable position for these projectiles when traveling through tissue since this places the bullet's center of gravity forward.

Projectile deformation destroys the aerodynamic shape of the bullet, shortening its length and increasing its diameter by expanding and flattening the bullet tip in the classic "mushroom" pattern exhibited by deforming JHP and JSP (*jacketed soft point bullets*). The larger frontal area of deformed bullets can crush more tissue, thus increasing permanent cavity size; more tissue is also displaced by a bullet with increased frontal area, causing an enlarged temporary cavity. The larger permanent and temporary cavities occur at a shallower penetration depth than that caused by non-deforming projectiles. The increased frontal area of a deformed bullet provides greater resistance to the projectile's passage, resulting in decreased penetration depth.

Projectile hyper-expansion and fragmentation in tissue can also greatly increase the permanent cavity size. When a rifle bullet hyper-expands and fragments in tissue, each of the multiple fragments spreads out radially from the main wound track, cutting its own path through tissue. This fragmentation acts synergistically with the stretch of temporary cavitation. The multiply perforated tissue loses its elasticity and is unable to absorb stretching that would ordinarily be tolerated by intact tissue. The temporary cavitation displacement of tissue, which occurs following the passage of the projectile, stretches this weakened tissue and can grossly disrupt its integrity, tearing and detaching pieces of tissue. Note that handgun bullets, regardless of whether they are fired from pistols or SMG's, do not generally exhibit the hyper-expansion and fragmentation effects produced by some rifle bullets. If handgun bullets do fragment, the bullet fragments are usually found within 1 cm of the permanent cavity and wound severity is usually decreased by the fragmentation since the bullet mass is reduced, causing a smaller permanent crush cavity. Depending on bullet design, as the velocity of a projectile is increased, the potential for fragmentation is often magnified. Tissue disruption can also be increased if bullets strike bone, since fractured bone fragments can act as secondary missiles, cutting through tissue surrounding the wound track. Furthermore, bullet deformation and

fragmentation is more likely to occur if a projectile strikes bone. This same fragmentation effect can occur if a bullet strikes an intermediate object, such as a belt buckle, prior to penetrating tissue.

The approximately 40% to 60% of gunshot victims who fall down immediately upon wounding are not knocked over by the kinetic energy or momentum of the bullet impact, but rather are incapacitated by physiological and psychological effects. Bullets cannot physically knock down a person by the force of their impact. The U.S. M1911 .45 Auto 230 gr FMJ bullet has developed a legendary reputation for having "knock-down power", yet the impact or momentum of that bullet hitting the body is equivalent to being hit by a 10 pound weight dropped from a height of only 1.37 inches. Obviously, this impact could not knock a person over. Newton's Second Law of motion shows that every action has an equal and opposite reaction. If a bullet had the energy to knock a person down on impact, the recoil of the gun would also knock the shooter down as the bullet was fired. This basic law of physics is dramatically illustrated by a well known demonstration in which an adult male, protected by body armor, is shot from less than five feet by a 7.62 x 51mm NATO bullet fired from an FN FAL type rifle; the approximately 2667 ft/lbs of energy which the bullet "deposits" or "transfers" to the man does not knock him down or push him violently backwards. Kinetic energy or momentum transfer from a projectile to tissue is not a wounding mechanism. The amount of energy "deposited" in the body by a bullet is approximately equal to the amount transferred to the body when a person is hit by a baseball. The amount of kinetic energy "deposited" or momentum transferred to a body by a projectile is not directly proportional to the amount of tissue damaged and is not a measure of wounding power. Wounds of vastly differing severity can be inflicted by bullets of identical kinetic energy and momentum. What the bullet does in the body--whether it yaws, deforms, or fragments, how deeply it penetrates, and what tissue it passes through is what determines wound severity, not kinetic energy, momentum, or velocity.

Projectiles which travel at supersonic velocity form a sonic wave which trails in the air behind the projectile. Because the speed of sound in tissue is four times faster than the speed of sound in air, the Sonic Wave jumps ahead of the projectile as the skin surface is penetrated, and then precedes the projectile through tissue. This sonic wave is often erroneously referred to as a "shock wave". There are no shock waves or hydrostatic shock effects in tissue. The sonic wave produces no tissue movement or tissue damage; it is not a wounding mechanism and should not be confused with temporary cavitation. The benign nature of a sonic wave is illustrated by lithotripter treatment of kidney stones, where similar sonic pressure waves cause no gross injury to the soft tissue surrounding the kidney stones.

A basic knowledge of external ballistics is necessary in order to understand the principles of wound ballistics. Because projectiles must overcome air resistance during their flight to the target, they have an elongated, pointed, aerodynamic shape that reduces drag in the air. However, this position places the bullet's center of gravity at the rear of the projectile, an inherently unstable position that would cause the bullet to deviate from a nose forward position during flight and tumble end over end through the air if not

rotationally stabilized by the spin imparted by the barrel's rifling. Yaw in flight is the angle of deviation of the projectile's longitudinal axis from its forward trajectory; in other words, the bullet turns sideways in relation to its direction of forward movement. Properly stabilized bullets have a negligible yaw angle in flight, usually less than three degrees, and do not tumble while in the air. Projectiles such as arrows and flechettes resist this tendency to yaw in the air because of the stabilization provided by their rear fins. Intermediate obstacles, including foliage, can disrupt bullet stabilization and induce tumbling while in flight, drastically compromising bullet accuracy and range. Bullets that are destabilized in flight can exhibit a large AOA on impact, causing increased tissue disruption at a shallower penetration depth than properly stabilized bullets.

A variety of equally important methodologies are used for terminal performance testing, including actual shooting incident reconstruction, forensic evidence analysis, and post-mortem data and/or surgical findings; properly conducted ethical animal test results; and laboratory testing—this includes the use of tissue simulants proven to have correlation with living tissue. The last several years of OCONUS military operations have provided a tremendous amount of combat derived terminal performance information. The U.S. government gathered numerous experts from a variety of disciplines, including military and law enforcement end-users, trauma surgeons, aero ballisticians, weapon and munitions engineers, and other scientific specialists to form the Joint Service Wound Ballistic Integrated Product Team to conduct a 4 year, 6 million dollar study to determine what terminal performance assessment best reflected the actual findings noted in combat the past few years. The test protocol that was found to be correct, valid, and became the agreed upon JSWB-IPT “standard” evolved from the one first developed by Dr. Fackler at LAIR in the 1980’s, promoted by the IWBA in the 1990’s, and used by most reputable wound ballistic researchers. The JSWB-IPT, FBI BRF, AFTE, and other organizations get to assess an extensive amount of post-shooting forensic data. The whole *raison d'être* of these independent, non-profit organizations is to interpret and disseminate information that will help LE and military personnel more safely and effectively perform their duties and missions. Physiological damage potential is the only metric that has been shown to have any correlation with field results in actual shooting incidents, based on law enforcement autopsy findings, as well as historical and ongoing combat trauma results.

**PARTIAL LIST OF REFERENCE MATERIALS**

Albanese M: "Debrief of 28 Feb 97 L.A.P.D. North Hollywood Bank Robbery Shoot Out". **SFPD**. 28 April 1997.

Amato JJ, Syracuse D, Seaver PR, Rich N: "Bone as a Secondary Missile: An Experimental Study in the Fragmenting of Bone by High Velocity Missiles". **The Journal of Trauma**. 29(5):609-612; May 1989.

Armstrong DP: "TR/4081/C01/1236—H&K 4.6x30mm PDW Comparative Penetration Test Report". **Naval Surface Warfare Center, Crane, Indiana**. 05 April 2001.

Bellamy RF: "Little Arrows". **Military Medicine**. 152(7):359-360; July 1987.

Berlin R, Janzon B, Rybeck B, Sandegard J, Seeman T: "Local Effects of Assault Rifle Bullets in Live Tissues" **Acta Chirurgica Scandinavica Supplementum 459**. Stockholm 1976.

Boone B: "FBI Weapon Selection, Rev II", **FBI BRF**. Quantico, VA. 18 January 2002.

Boone B: "Ammunition Selection", **National SWAT Sniper Symposium**. Quantico, VA. 26 January 2007

Bowen TE and Bellamy RF (ed). "Chapter II: Missile Caused Wounds", **Emergency War Surgery: Second United States Revision of the Emergency War Surgery NATO Handbook**. Washington D.C., U.S. Government Printing Office, 1988.

Bowen TE and Bellamy RF (ed). "Chapter XVI: Wounds and Injuries of the Soft Tissues", **Emergency War Surgery: Second United States Revision of the Emergency War Surgery NATO Handbook**. Washington D.C., U.S. Government Printing Office, 1988.

California Highway Patrol Academy Weapons Training Staff: "10mm Testing and Evaluation", September 1989.

California Highway Patrol Academy Weapons Training Staff: "Test and Evaluation 10mm Semi-Automatic Pistol", May 1990.

Corzine AJ and Roberts GK: "Correlation of Ordnance Gelatin Penetration Results Between 20% Gelatin at 10°C and 10% Gelatin at 40°C". **AFTE Journal**. 25(1):2-5, January 1993.

California Highway Patrol Officer Involved Shootings Investigation Team conference. Vallejo, CA. November 1997.

CTTSO/TSWG: **Test Evaluation Report for the M4A1/Mk12 Modified Upper Receiver Group (MURG)**. Arlington, VA. July 2007.

CTTSO/TSWG: **Congressional Briefing and Demonstration**. Quantico, VA. 11 July 2008.

CTTSO/TSWG: **AIM I-V Proceedings**. 2009-2013.

Defense Forum: "Wound Ballistics: A Target for Error". **International Defense Review**. 8:895-897; 1988.

DOD JSWB-IPT. Cummulative Testing and Results. 2002-2006.

Ezell EC. **The AK-47 Story**. Harrisburg, Stackpole Books, 1986.

Ezell EC (ed.). **Small Arms of the World, 12th Revised Edition**. Stackpole Books, Harrisburg, 1983.

Fackler ML: "Introduction" in La Garde LA. **Gunshot Injuries, 2nd Revised Edition**. Lancer Militaria, Mt. Ida, 1991.

Fackler ML and Dougherty PJ: "Theodor Kocher and the Scientific Foundation of Wound Ballistics". **Surgery, Gynecology, and Obstetrics**. 172:153-160; February 1991.

Fackler ML: "The Ideal Police Bullet", Internal Security and Co-In Supplement to **International Defense Review**. 11(Supplement #2):45-46; 1990.

Fackler ML: "Wound Ballistics". Lecture to German Police Academy in Wittlich, Germany; 23-24 October 1990.

Fackler ML: "Wound Ballistics: The Management of Assault Rifle Injuries: **Military Medicine**". 155:222-225; May 1990.

Fackler ML, Malinowski JA, Hoxie SW, Jason A: "Wounding Effects of the AK-47 Rifle Used by Patrick Purdy in the Stockton, California, Schoolyard Shooting of January 17, 1989". **The American Journal of Forensic Medicine and Pathology**. 11(3):185-189; 1990.

Fackler ML and Kneubuehl BP: "Applied Wound Ballistics: What's New and What's True". **Journal of Trauma (China)**. 6(2) Supplement:32-37; 1990.

Fackler ML: "Letter to the Editor" **British Journal of Surgery**. 76(11):1217; November 1989.

Fackler ML and Peters CE: "Letter to the Editor". **The Journal of Trauma**. 29(10):1455; October 1989.

Fackler ML: "FBI Chooses a 10mm Bullet". **International Defense Review**. 9:1138; 1989.

Fackler ML: "ACR Candidates: Assessing Their Wounding Potential". **International Defense Review**. 8:1091-1092; 1989.

Fackler ML and Bellamy RF: "Considering the Wounding Effects of a Hit". **Army Times**. 49(46):24; June 1989.

Fackler ML, Bretau JPL, Courbil LJ, Taxit R: "Open Wound Drainage Versus Wound Excision in Treating the Modern Assault Rifle Wound". **Surgery**. 105(5):576-584; May 1989.

Fackler ML: "Effects of Small Arms on the Human Body". **Proceedings of the 11th International Symposium on Ballistics**. Brussels, 9-11 May 1989.

Fackler ML: "Letter to the Editor" **Wall Street Journal**. A-15; 10 April 1989.

Fackler ML: "Misinterpretations Concerning Larrey's Methods of Wound Treatment". **Surgery, Gynecology, and Obstetrics**. 168:280-282; March 1989.

Fackler ML: "Wounding Patterns of Military Rifle Bullets". **International Defense Review**. 1:59-64; 1989.

Fackler ML: "Stockton--The Facts". **Letterman Army Institute of Research**. 1989.

Fackler ML, Bretau JPL, Sendowski ICP, Martin PDF: "Perforating Wounds of the Abdomen by the Modern Assault Rifle". **Proceedings of the 6th International Wound Ballistics Symposium**. Chonqing, China, 1-4 November 1988; and **Journal of Trauma (China)**. 6(2) Supplement:192-199; 1990.

Fackler ML: "Wound Ballistic Research of the Past Twenty Years: A Giant Step Backwards". **Proceedings of the NATO Wound Ballistics Research Group 11**. London, 18 October 1988; and **Letterman Army Institute of Research: Institute Report #447**. January 1990.

Fackler ML: "Wound Ballistics: A Review of Common Misconceptions". **Journal of the American Medical Association**. 259(18):2370-2736; May 1988.

Fackler ML: "Handgun Bullet Performance". **International Defense Review**. 5:555-557; 1988.

Fackler ML, Breteau JPL, Coubil LJ, Taxit R, Glas J, Fievet JP: "Open Wound Drainage Versus Wound Excision on the Modern Battlefield". **Letterman Army Institute of Research: Institute Report #256.** February 1988.

Fackler ML: "The Wound Profile: Illustration of the Missile-Tissue Interaction". **The Journal of Trauma.** 28(1 Supplement):S21-S29; January 1988.

Fackler ML and Malinowski JA: "Internal Deformation of the AK-74; A Possible Cause for its Erratic Path in Tissue". **The Journal of Trauma.** 28(No.1 Suppl):S72-S75; January 1988.

Fackler ML and Malinowski JA: "Ordnance Gelatin for Ballistic Studies: Detrimental Effect of Heat Used in Gelatin Preparation". **Letterman Army Institute of Research: Institute Report #245.** December 1987; and **The American Journal of Medicine and Pathology.** 9(3):218-219; 1988.

Fackler ML: "Letter to the Editor". **Military Medicine.** 152: 531-533; October 1987.

Fackler ML: "Letter to the Editor". **Combat Handguns.** 8(4):74; August 1987.

Fackler ML: "What's Wrong With the Wound Ballistic Literature". **Letterman Army Institute of Research: Institute Report #239.** July 1987.

Fackler ML and Malinowski JA: "Letter to the Editor". **Journal of Forensic Sciences.** 32:837-838; July 1987.

Fackler ML: "Wounds and Injuries of the Soft Tissues". **Letterman Army Institute of Research: Institute Report #232.** April 1987.

Fackler ML: "Missile Caused Wounds". **Letterman Army Institute of Research: Institute Report #231.** April 1987.

Fackler ML: "Letter to the Editor: Bullet Performance Misconceptions". **International Defense Review.** 3:369-370; 1987.

Fackler ML: "Physics of Missile Injuries" in McSwain NE and Kerstein MD (ed). **Evaluation and Management of Trauma.** Norwalk, Appleton-Crofts, 1987.

Fackler ML: "Ballistic Injury". **Annals of Emergency Medicine.** 15:(12); 1451-1455, December 1986.

Fackler ML: "Letter to the Editor". **The Journal of Trauma.** 26(12):157-1158; December 1986.

Fackler ML: "Letter to the Editor". **Orthopedics.** 9(10):1336-1342; October 1986.

Fackler ML: "Wound Ballistics" in Trunkey DD and Lewis FR (ed). **Current Therapy of Trauma--2**. Toronto, B.C. Decker, 1986.

Fackler ML: "The Wound Profile: A Visual Method for Quantifying Gunshot Wound Components". **The Journal of Trauma**. 25(6):522-529; 1985.

Fackler ML: "Letter to the Editor". **American Surgeon**. 50:515; 1984.

Fackler ML, Surinchak MA, Malinowski JA, Bowen RE: "Wounding Potential of the Russian AK-74 Assault Rifle". **The Journal of Trauma**. 24(3):263-266; 1984.

Fackler ML: "Bullet Fragmentation: A Major Cause of Tissue Disruption". **The Journal of Trauma**. 24(1):35-39; January 1984.

FBI Academy FTU and BRF. **Ammunition Tests 1989-2012**. Quantico, U.S. Department of Justice--Federal Bureau of Investigation.

FBI Academy Firearms Training Unit. **Semiautomatic Pistols**. Quantico, Department of Justice--Federal Bureau of Investigation, 1987-1988.

FBI Academy Firearms Training Unit: "9mm vs. .45 auto". **FBI Wound Ballistic Workshop**. Quantico, 15-17 September, 1987.

FBI BRF and DSU: "PA OIS Incident 29 November 2006". 2006.

Frost R (ed). "Bullet Holes in Theories". **International Defense Review**. 8:875; 1988.

Gong J: "Shotgun Replacement". **City of Sunnyvale Department of Public Safety, CA**. April 24, 1997.

Greenwood C: "The Political Factors" in Warner K (ed). **Gun Digest 34th Edition**. Chicago, Follet, 1980.

Gunsite Training Center Staff: "The Call-Out Bag, A Comparison of .223 Penetration versus Handgun Calibers". **The Tactical Edge**. Summer 1994, p. 63-64.

IWBA Conference Proceedings, Sacramento, CA. 1994.

IWBA Conference Proceedings, Long Beach, CA. 1997.

Jason A and Fackler ML. **Body Armor Standards: A Review and Analysis--Final Report, 2nd Edition**. Pinole, Center for Ballistic Analysis, 1990.

Jason A. **Deadly Effects: Wound Ballistics**. Pinole, Anite Productions; 80 minute videotape, 1987.

Karcher SK: "TR/2024/C91/586--Test and Evaluation Report of 9mm Jacketed Hollow-Point (JHP) Cartridges for Naval Investigative Service (NIS) use in the XM11 9mm Compact Pistol". **Naval Surface Warfare Center, Crane, Indiana**. 30 October 1991.

Lazzarini D: "Firearms Study--Long Rifles". **Santa Clara, CA Police Department**. 1995.

Letterman Army Institute of Research, Division of Military Trauma Research. **Laboratory Logs of Wound Ballistic Testing**. November 1986 to May 1991.

Lindsey D: "The Idolatry of Velocity, or Lies, Damn Lies, and Ballistics". **The Journal of Trauma**. 20(12):1068-1069; 1989.

MacPherson D: **Bullet Penetration: Modeling the Dynamics and the Incapacitation Resulting from Wound Trauma**. Ballistic Publications, El Segundo, CA, 1994.

Marsh C: "Comparison of Terminal Ballistic Performance of M855, Mk318, 115 gr 6.8 SPC and Mk319". **Naval Surface Warfare Center, Crane, Indiana**. 21 December 2009.

NDIA: Proceedings of Joint Small Arms Meetings. 2002-2012.

Patrick UW: "Handgun Wounding and Effectiveness". **FBI Academy Firearms Training Unit**. Quantico, 14 July, 1989.

Roberts GK and Wolberg EJ: "Book Review—Handgun Stopping Power: *The Definitive Study by Marshall EP and Sanow EJ. Boulder, Paladin Press, 1992*". **AFTE Journal**. 24(3):383-387, October 1992.

Roberts GK and Bullian ME: "Protective Ability of the Standard U.S. Military Personal Armor System for Ground Troops (PASGT) Fragmentation Vest Against Common Small Arms Projectiles". **Military Medicine**. 158:560-563, August 1993.

Roberts GK: "Terminal Performance of 9mm 147 gr Jacketed Hollow Point Bullets fired from the HK MP-5, using 10% Ordnance Gelatin as a Tissue Simulant". **AFTE Journal**. 30(2):330-333, Spring 1998.

Roberts GK: Personal Communication with Eugene J. Wolberg regarding the wounds produced by Winchester and Federal 9mm 147 gr JHP bullets in nearly 150 officer involved shootings at the San Diego Police Department. May 2000.

Roberts G, Lazzarini D, Pomerleau P. "Wounding Effects of Choke™ 12 Gauge 00 Buckshot Loads Intended for Law Enforcement Duty Using 10% Ordnance Gelatin". **AFTE Journal**. 34(3):287-288, Summer 2002.

Roberts G and Bullian M: Unpublished data from CHP Academy wound ballistic testing 1992-1999.

Roberts G and Lazzarini D: Unpublished data from SCPD wound ballistic testing. 2000-2004.

Roberts GK: Unpublished data from SJPD wound ballistic testing. 2005-2012.

Roberts GK and Bullian M: "Comparison of the Wound Ballistic Potential of 9mm vs. 5.56mm (.223) Cartridges for Law Enforcement Entry Applications". **AFTE Journal**. 25 (2):142-147; April 1993.

Roberts GK: "*Preliminary Evaluation of the Terminal Performance of the 5.7 x 28 mm 23 Grain FMJ Bullet Fired by the New FN P-90 Using 10% Ordnance Gelatin as a Tissue Simulant*". **AFTE Journal**. 30(2):326-329, Spring 1998.

Roberts GK: "Review of Current Military Wound Ballistics". **USMC**. 26 June 2009.

Taubert RK: "Evaluation of the 5.56x45mm/.223 Caliber Round for Close Quarter Battle (CQB) Applications". **FBI Memos**. 8/18/93, 4/20/94, 7/28/94.

Trunkey DD: "Editorial: Comments on the Article by Fackler, et al". **Surgery**. 105(5):693-694; May 1989.

**USMC: Wound Ballistic Review**. SOTG, Camp Pendleton, CA. 06 August 2002.

**USMC: Ammunition Selection and Procurement Briefing**. I MEF, Camp Pendleton, CA. 15 August 2002.

**USMC: Wound Ballistic Review**. MARSOCOMDETONE, Camp Pendleton, CA. 27 October 2003.

**USMC: Wound Ballistic Review**. SOTG, Camp Pendleton, CA. 15 June 2004.

**USMC: Test Evaluation Report for the Alternative Ammunition Study Phase I**. PM-IW MARCORSYSCOM, Quantico, VA. 11 August 2006.

**USMC: Wound Ballistic Review**. SOTG, Camp Pendleton, CA. 14 August 2007.

**USN: NSW Sniper Terminal Ballistics**. NSWG2, Camp Atterbury, IN. 12 September 2002.

**USSOC: Joint Service SOPMOD OCONUS Combat Review**. 5<sup>th</sup> SFG(A), Ft. Campbell, KY. 22 August 2002.

**USSOC: SOF Weapons IPT**. WARCOM, Coronado, CA. 26 February 2003.

Wakefield D: "Shot Spread Reducing and Shot Spread Eliminating Wads". **AFTE Journal**. 32(4):361-162, Fall 2000

IWBA: **Wound Ballistics Review**. Volumes 1-5; 1991-2001.

Expert Testimony:

Deposed in *Wilson v. Cook County, IL*.

Deposed in *Kolbe v. O'Malley*, No. 1:13-cv-02841-CCB, in the U.S. District Court for the District of Maryland, on January 8, 2014.

## **CURRICULUM VITAE**

**Gary K. Roberts, D.D.S.**

August 2017

### ***BIOGRAPHIC INFORMATION***

#### **CONTACT INFORMATION**

Address: 750 Welch Road, Suite 118 Palo Alto, CA 94304  
Telephone: (650) 328-6684  
FAX: (650) 328-6685  
E-Mail: g roberts@stanford.edu or gkrdds@hotmail.com

#### **EDUCATION**

1989 United States Navy Hospital Oakland, General Practice Residency  
1988 University of the Pacific, School of Dentistry, D.D.S.  
1984 University of the Pacific, College of the Pacific, B.A.

#### **LICENSURE**

1993 California Conscious Sedation Permit (CS257)  
1990 DEA Controlled Substance Registration Certificate (BR2268705)  
1989 California State Dental License (37762)

#### **EMPLOYMENT**

2013-Present Stanford University, Plastic Surgery Division, Clinical Instructor  
1989-Present Private Practice: Palo Alto, CA (*General and Hospital Dentistry*)  
1986-2008 United States Navy Reserve (*2205 General Dentistry with subspecialty codes 1700V for Hospital Dentistry and 1705S for Oral Surgery*)

#### **HOSPITAL and CLINIC APPOINTMENTS**

1997-Present Stanford University Hospital, Palo Alto, CA  
1997-Present Lucille Salter Packard Children's Hospital, Palo Alto, CA  
1992-2001 Sequoia Hospital, Redwood City, CA  
1990-1997 Naval Dental Center, San Francisco, CA  
1989-1996 Naval Hospital Oakland, CA  
1989-1990 Naval Hospital Roosevelt Roads, Puerto Rico  
1989-1990 Naval Dental Clinic, Long Beach, CA

#### **HONORS and AWARDS**

2015 Stanford University School of Medicine, Primary Care Associate Program,  
Mary Em Wallace Teaching Award  
1992 Federal Executive Board-Federal Employee of the Year for Scientific Research  
1992 American Society for Public Administration, San Francisco Bay Area Chapter:  
William J. Sheppard Award for exemplary public service  
1980 Eagle Scout Award

PROFESSIONAL ORGANIZATIONS

1993-Present	Dental Board of California ( <i>Anesthesia Evaluator</i> )
1992-Present	Mid-Peninsula Dental Society ( <i>Peer Review Committee--2005 to present; Ethics Committee—2012 to present</i> )
1992-Present	American Dental Society of Anesthesiology
1992-Present	California Dental Society of Anesthesiology
1989-2001	Association of Firearms and Toolmark Examiners ( <i>Technical Advisor</i> )
1989-1999	International Wound Ballistics Association
1988-2008	Association of Military Surgeons of the United States
1988-2005	Academy of Osseointegration
1988-Present	California Dental Association ( <i>Council on Peer Review—2012 to present</i> )
1988-Present	American Dental Association

**SCHOLARLY AND TEACHING ACTIVITIES**

OPEN SOURCE PUBLICATIONS

1. Roberts GK. "Chap 3: His Mouth". *Men's Health—A Head to Toe Guide for Clinicians*. Potts JM (ed). New York: Springer, 2015. 23-33.
2. Lau G, Kulkarni V, Roberts GK, Brock-Utne, J; "Where Are My Teeth? A Case of Unnoticed Ingestion of a Dislodged Fixed Partial Denture". *Anesthesia & Analgesia*. 109(3):836-838, 2009.
3. Roberts GK: "Time for a Change -- U.S. Military Small Arms Ammunition Failures and Solutions". NDIA. May 2008; <http://www.dtic.mil/ndia/2008Intl/Roberts.pdf>
4. Roberts G, Lazzarini D, Pomerleau P. "Wounding Effects of Choke 12 Gauge 00 Buckshot Loads Intended for Law Enforcement Duty Using 10% Ordnance Gelatin". *AFTE Journal*. 34(3):287-288, Summer 2002.
5. Roberts GK & Lazzarini D: "Preliminary Evaluation of .357 Sig Jacketed Hollow Point Bullets Intended for Law Enforcement Duty Using 10% Ordnance Gelatin as a Tissue Simulant." *Wound Ballistic Review*. 4(4):32-33, Fall 2000.
6. Roberts GK: "Terminal Performance of .38 Special and .380 ACP Hollow Point Bullets Intended for Law Enforcement Back-up and Off Duty Self-Defense Using 10% Ordnance Gelatin as a Tissue Simulant". *Wound Ballistic Review*. 4(3):35-38, Spring 2000.
7. Roberts GK: "Law Enforcement General Purpose Shoulder Fired Weapons--The Wounding Effects of 5.56mm/.223 Carbines Compared With 12 ga. Shotguns and Pistol Caliber Weapons using 10% Ordnance Gelatin as a Tissue Simulant". *Wound Ballistics Review*. 3(4):16-27, 1998.
8. Roberts GK: "Terminal Performance of 9mm 147 gr Jacketed Hollow Point Bullets fired from the HK MP-5, using 10% Ordnance Gelatin as a Tissue Simulant". *AFTE Journal*. 30(2):330-333, Spring 1998.
9. Roberts GK: "Preliminary Evaluation of the Terminal Performance of the 5.7 x 28 mm 23 Grain FMJ Bullet Fired by the New FN P-90 Using 10% Ordnance Gelatin as a Tissue Simulant". *AFTE Journal*. 30(2):326-329, Spring 1998.
10. Roberts GK: "Comparison of the Terminal Performance of 9mm Parabellum, .40 S&W, and .45 ACP Jacketed Hollow Point Bullets Intended for Law Enforcement and Military

*Special Operations Applications, Using 10% Ordnance Gelatin as a Tissue Simulant".*  
**Wound Ballistics Review.** 1 (4):32-37, 1994.

11. Roberts GK and Bullian ME: "Protective Ability of the Standard U.S. Military Personal Armor System for Ground Troops (PASGT) Fragmentation Vest Against Common Small Arms Projectiles". **Military Medicine.** 158:560-563, August 1993.

12. Roberts GK and Bullian ME: "Comparison of the Wound Ballistic Potential of 9mm vs. 5.56mm (.223) Cartridges for Law Enforcement Entry Applications". **AFTE Journal.** 25(2):142-148, April, 1993.

13. Roberts GK: "Preliminary Report on the Performance of the New Winchester .45 ACP 230 Grain Jacketed Hollow Point Bullets in 10% Ordnance Gelatin". **Wound Ballistics Review.** 1(2):21-23, Winter 1992.

14. Roberts GK and Wolberg EJ: "Book Review—Handgun Stopping Power: The Definitive Study by Marshall EP and Sanow EJ. Boulder, Paladin Press, 1992". **AFTE Journal.** 24(3):383-387, October 1992.

15. Corzine AJ and Roberts GK: "Correlation of Ordnance Gelatin Penetration Results Between 20% Gelatin at 10°C and 10% Gelatin at 4°C". **AFTE Journal.** 25(1):2-5, January 1993.

16. Fackler ML and Roberts GK: "Failure to Expand: Federal 7.62x39mm Soft Point Bullets". **Wound Ballistics Review.** 1(2):18-20, Winter 1992.

**RESTRICTED ACCESS PUBLICATIONS AND SEMINARS**

List available to authorized entities on request.

**RECENT SUBJECT MATTER EXPERT & EXPERT WITNESS CASES**

Vernon vs. Safariland

US Army Materiel Command Sig Sauer XM17 MHS vs. Glock, USGAO Protest

Kolbe vs. O'Malley

NY State Rifle & Pistol Association vs. Cuomo

Friedman vs. City of Highland Park

Wilson vs. Cook County

**RECENT LECTURES AND SEMINARS PRESENTED**

8/26/17 "Peer Review Calibration" – CDA (4 hours)

7/26/17 "Head Trauma & TBI with Maxillofacial Injury" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

7/25/17 "Dentoalveolar Trauma, Tooth Displacement Injuries, and Odontogenic Infections" -- Stanford University Medical School Plastic Surgery Resident Education Seminar (1.5 hours)

7/20/17 "Suturing & Dental Splinting Workshop" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

7/11/17 "Maxillofacial Trauma" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

7/6/17 "MMF Workshop" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

7/3/17 "Introduction to Dental Care at Stanford for GPR's: ED Treatment and Inpatient Consults" -- Stanford University Medical Center Oral Medicine and OMFS (1 hour)

5/19/17 "Method and creation of intraoral mouth-opening and tongue-depressing stents for head and neck radiation using 3D modeling and printing" -- Poster Presentation for Oral Oncology Symposium at MD Anderson Cancer Center

5/17/17 "Mandibular Dislocations and Maxillofacial Trauma" -- Stanford University Medical Center PA Program (1hour)

2/23/17 "Gun Laws & Gun Control" -- Federal Bar Council Annual Bench & Bar Conference (1.5 hours)

2/9/17 "Orofacial Pain" – Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

2/2/17 "Pathophysiology of Penetrating Projectile Wounds" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

1/30/17 "Wound Ballistics for Law Enforcement SWAT Teams" – San Mateo SO (5 hours)

1/24/17 "Dental Concerns in the Geriatric Patient" -- Stanford University Medical Center PA Program (1 hour)

1/21/17 "Oral Health Concerns Following Oropharyngeal Cancer Therapy" – Stanford Head & Neck Cancer Patient Education Symposium (1 hour)

1/12/17 "Dental Implant & Bone Grafting Clinical Treatment Considerations" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

1/5/17 "Sedation for Maxillofacial and Odontogenic Intraoral Procedures" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

12/8/16 "TMD and Orofacial Pain" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

12/1/16 "Oral Pathology Review" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

11/3/16 "Head Trauma & TBI with Maxillofacial Injury" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

10/27/16 "Suturing & Dental Splinting Workshop" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

10/13/16 "MMF Workshop" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

10/6/16 "Maxillofacial Trauma" -- Stanford OMFS/VA Palo Alto Medical Center GPR (2 hours)

9/29/16 "Wound Ballistics for Law Enforcement" – Sonoma SO (4 hours)

9/10/16 "Peer Review Calibration" – CDA (4 hours)

8/30/16 "Introduction to Dentistry: Common Dental Problems Encountered by Healthcare Providers" – Stanford University Medical Center PA Program (1 hour)

7/19/16 "Dentoalveolar Trauma and Tooth Displacement Injuries" -- Stanford University Medical School Plastic Surgery Resident Education Seminar (1.5 hours)

7/14/16 "Introduction to Dental Care at Stanford for GPR's: ED Treatment and Inpatient Consults" -- Stanford University Medical Center Oral Medicine and OMFS (1 hour)

5/16/16 "TMJ, Mandibular Dislocations, and Maxillofacial Trauma" -- Stanford University Medical Center PA Program (1 hour)

3/11/16 "Oral Health Concerns Following Oropharyngeal Cancer Therapy" – Joint Harvard-Stanford University OHNS Oncology Conference (0.75 hour)

2/11/16 "Introduction to Dentistry: Common Odontogenic Problems and How They Interface with Radiology, Part 2" – Stanford University Medical Center – Neuroradiology Grand Rounds (1 hour)

RECENT CONTINUING EDUCATION COURSES ATTENDED

8/24/17 "Periodontal and Bone Regeneration: Principles to Practice" – CDA & Mark Reynolds (2.5 units)

8/24/17 "Peri-Implant Diseases: An Emerging Crisis?" – CDA & Mark Reynolds (2.5 units)

8/24/17 "Understanding Oral Pathology Through Clinicopathological Correlation" – CDA & Darren Cox (2.5 units)

7/27/17 "Anesthesia Evaluator" -- CA State Dental Board (2 units)

6/27/17 "Radiation Therapy for Head and Neck Cancer Patients" – Stanford University Cancer Center & Beth Beadle (1.5 units)

5/18-20/17 Oral Oncology Symposium – MD Anderson Cancer Center (18 units)

3/30/17 to 4/1/17 International Bone Symposium in Implant Dentistry 2017 – UOP School of Dentistry (16 Units)

3/2/17 CDSA 2017 Official Scientific Meeting – CDSA & Art Curley, Steven Yun, Bruce Whitcher, Michael Rollert, Thomas Einstein (8 units)

1/17/17 "Anesthesia Evaluator" -- CA State Dental Board (2 units)

12/6/16 Annual OSHA Safety Training/Infection Control Training/Dental Practice Act Training – Make Compliance Simple (5 units)

10/20/16 "Building Cultural Competency Through Effective Interpersonal Communication" - Stanford University Medical School & Richard Francisco (1.5 units)

10/18/16 CDA Peer Review Advisory Panel (1 unit)

9/9/16 "Neuropathic Mouth Pain" – CDA & Andrew Young (2.5 units)

9/9/16 "Predictable Advanced Restorative Dentistry" – CDA & Jeff Brucia (2.5 units)

9/9/16 "Restorative Materials Update" – CDA & Jeff Brucia (3 units)

9/8/16 "Mastering Endodontic Shaping" – CDA & John West (2.5 units)

9/8/16 "Temporomandibular Disorders" – CDA & Andrew Young (2.5 units)

9/6/16 CDA Peer Review Advisory Panel (1 unit)

6/14/16 CDA Peer Review Advisory Panel (1 unit)

5/19/16 "Update on Implant Surgery in Partially Edentulous Patients" – PIADS & Daniel Buser (3 units)

5/17/16 "Anesthesia Evaluator" -- CA State Dental Board (2 units)

5/3/16 CDA Peer Review Advisory Panel (1 unit)

3/22/16 CDA Peer Review Advisory Panel (1 unit)

3/3/16 Medical and Surgical Management of TMJ Dysfunction" – Stanford University Medical Center OHNS Grand Rounds & Thad Connelly (1.5 units)

2/25/16 CDSA 2016 Official Scientific Meeting – CDSA & Joseph Giovanitti, Lenny Naftalin, Theresa Lane, Thomas Einstein (8 units)

2/9/16 CDA Peer Review Advisory Panel (1 unit)

12/1/15 CDA Peer Review Advisory Panel (1 unit)

11/19/15 "Blood Borne Pathogens & OSHA Training" – Make Compliance Simple (2 units)

9/12/15 "Autogenous Gingival Grafting: The Minimally Invasive KIWI method" – UOP School of Dentistry & George Merijohn (3 units)

9/12/15 "Management and Prevention of Gingival Recession" – UOP School of Dentistry and George Merijohn (3 units)

8/21/15 A Partial Course on Partial Dentures – CDA & Nader Sharifi (2.5 units)

**NYPD**

**2015**

---

Annual Firearms  
Discharge Report



**JAMES P. O'NEILL**  
Police Commissioner

# Annual Firearms Discharge Report

# 2015

James P. O'Neill

Police Commissioner

New York City Police Department, October 2016

Cover photo by Iván Lara (<https://www.flickr.com/photos/ivan-lara/>)

*In Memoriam*



Detective  
Brian Moore  
105 PCT  
May 4, 2015

Detective  
Randolph Holder  
PSA 5  
October 20, 2015

*Fidelis Ad Mortem*

## Contents

<b>ANNUAL FIREARMS DISCHARGE REPORT .....</b>	<b>I</b>
<b>IN MEMORIAM .....</b>	<b>II</b>
FIGURES .....	VI
<b>PART I: OVERVIEW .....</b>	<b>1</b>
INTRODUCTION .....	2
USE OF FORCE .....	3
<i>Guidelines for the Use of Firearms .....</i>	4
<i>Reasonableness .....</i>	5
<i>Training .....</i>	5
<i>Investigation and Review Process .....</i>	5
<i>The Shooting Team .....</i>	6
<i>The Shooting Incident Report .....</i>	7
<i>The Final Report .....</i>	7
<i>Review .....</i>	8
<i>The Borough Firearms Discharge Advisory Board .....</i>	8
<i>The Chief of Department's Firearms Discharge Review Board .....</i>	8
<i>The Police Commissioner .....</i>	8
<i>Force Investigation Division .....</i>	9
GLOSSARY .....	11
<b>2015 REPORT .....</b>	<b>17</b>
<i>Total Firearms Discharges .....</i>	17
<i>Categories .....</i>	17
<b>PART II: INTENTIONAL DISCHARGE – ADVERSARIAL CONFLICT .....</b>	<b>19</b>
OVERVIEW .....	20
DATES AND TIMES OF DISCHARGES .....	20
LOCATIONS OF DISCHARGES .....	21
<i>Locations of Criminal Shootings .....</i>	21
<i>Location Type .....</i>	25
REASONS OFFICER INVOLVED .....	25
<i>Threat Type .....</i>	27
OFFICER RESTRAINT .....	27
OBJECTIVE COMPLETION RATE .....	28
OFFICER FIREARMS .....	29
<i>Shooting Technique .....</i>	29
OFFICER PEDIGREE .....	29
SUBJECT PEDIGREE .....	31
<i>Prior Arrests .....</i>	32
<i>Officer Deaths .....</i>	33

<i>Officer Injuries</i> .....	33
<i>Bullet-Resistant Vests</i> .....	33
<i>Subject Deaths</i> .....	33
<i>Subject Injuries</i> .....	34
<i>Bystander Death &amp; Injuries</i> .....	34
<i>Discipline</i> .....	34
<b>SUMMARY</b> .....	35
<b>PART III: INTENTIONAL DISCHARGE – ANIMAL ATTACK</b> .....	<b>36</b>
OVERVIEW.....	37
DATES AND TIMES OF DISCHARGES .....	38
LOCATIONS OF DISCHARGES .....	40
REASONS OFFICER INVOLVED .....	40
OFFICER RESTRAINT .....	41
OBJECTIVE COMPLETION RATE .....	42
FIREARMS.....	42
<i>Shooting Techniques</i> .....	42
OFFICER PEDIGREE .....	43
INCIDENT OUTCOMES .....	44
<b>PART IV: UNINTENTIONAL DISCHARGE</b> .....	<b>45</b>
OVERVIEW.....	46
NON-ADVERSARIAL UNINTENTIONAL DISCHARGES.....	46
<i>Loading/Unloading</i> .....	46
<i>Handling</i> .....	46
ADVERSARIAL UNINTENTIONAL DISCHARGES .....	47
FIREARMS.....	47
OFFICER PEDIGREE .....	47
INCIDENT OUTCOMES .....	48
<b>PART V: UNAUTHORIZED USE OF A FIREARM</b> .....	<b>49</b>
OVERVIEW.....	50
OFFICER PEDIGREE .....	50
SUICIDE.....	50
DISCHARGES BY OTHER THAN AN OFFICER .....	51
INCIDENT OUTCOMES .....	51
<b>PART VI: MISTAKEN IDENTITY</b> .....	<b>52</b>
OVERVIEW.....	53
2015 INCIDENTS.....	53

<b>APPENDICES .....</b>	<b>54</b>
APPENDIX A: TRIBUTE .....	55
APPENDIX B: HISTORICAL DATA 1971-2015.....	56
APPENDIX C: FIREARMS TRAINING.....	59
<i>Overview</i> .....	59
<i>Shoot to Stop</i> .....	59
<i>Weapons Control</i> .....	59
<i>NYPD Pistols</i> .....	60
<i>Center Mass</i> .....	60
APPENDIX D: SUBJECTS KILLED DURING ID-AC INCIDENTS .....	61
APPENDIX E: SUBJECT INJURY & RACE .....	65
APPENDIX F: INCIDENT BREAKDOWN TABLES.....	67

# Figures

## PART I: OVERVIEW

FIGURE 1 – ANATOMY OF A FIREARMS DISCHARGE INVESTIGATION .....	10
FIGURE 2 – HISTORICAL SNAPSHOT, 2005-2015 .....	13
FIGURE 3 – ADVERSARIAL CONFLICT, 2005-2015 .....	13
FIGURE 4 – ANIMAL ATTACK, 2005-2015 .....	13
FIGURE 5 – UNINTENTIONAL DISCHARGES, 2005-2015 .....	13
FIGURE 6 – TOTAL DISCHARGE INCIDENTS, 2005-2015 .....	13
FIGURE 7 – 2014 v. 2015 SNAPSHOT .....	14
FIGURE 7A – 2015 BY CATEGORY .....	15
FIGURE 8 – 2015 FIREARMS DISCHARGE SCOPE .....	16

## PART II: INTENTIONAL DISCHARGE - ADVERSARIAL CONFLICT

FIGURE 9 – ID-AC INCIDENTS BY TOUR .....	20
FIGURE 10 – ID-AC INCIDENTS BY LOCATION .....	21
FIGURE 11 – ID-AC INCIDENTS VS CRIMINAL SHOOTING INCIDENTS .....	22
FIGURE 12 – CY 2015 SHOTSPOTTER INCIDENTS .....	23
FIGURE 13 – ID-AC INCIDENTS VS CRIMINAL SHOOTING INCIDENTS, PERCENTAGE BY BOROUGH .....	24
FIGURE 14 – ID-AC INCIDENTS VS CRIMINAL SHOOTING INCIDENTS, FREQUENCY BY BOROUGH .....	24
FIGURE 15 – ID-AC INCIDENTS BY LOCATION TYPE .....	25
FIGURE 16 – ON-DUTY OFFICER ASSIGNMENT, ID-AC INCIDENTS .....	26
FIGURE 17 – SITUATIONS PRECIPITATING ON-DUTY ID-AC INCIDENTS .....	27
FIGURE 18 – THREAT TYPE: ID-AC INCIDENTS .....	27
FIGURE 19 – ROUNDS FIRED PER ID-AC INCIDENT .....	28
FIGURE 20 – ROUNDS FIRED PER ID-AC OFFICER .....	28
FIGURE 21 – ID-AC DISTANCE TO TARGET .....	29
FIGURE 22 – RACE, ID-AC OFFICERS VS DEPARTMENT STAFFING .....	30
FIGURE 23 – YEARS OF SERVICE, ID-AC OFFICERS VS DEPARTMENT STAFFING .....	31
FIGURE 24 – RANK, ID-AC OFFICERS VS DEPARTMENT STAFFING .....	31
FIGURE 25 – CRIMINAL SHOOTING SUSPECTS VS ID-AC SUBJECTS, BY RACE .....	32

## PART III: INTENTIONAL DISCHARGE - ANIMAL ATTACK

FIGURE 26 – ID-AA INCIDENTS BY TOUR .....	38
FIGURE 27 – ID-AA INCIDENTS .....	39
FIGURE 28 – ID-AA INCIDENTS BY LOCATION .....	40
FIGURE 29 – ID-AA INCIDENTS BY LOCATION TYPE .....	40
FIGURE 30 – ON DUTY OFFICER ASSIGNMENT, ID-AA INCIDENTS .....	41
FIGURE 31 – SITUATIONS PRECIPITATING ID-AA INCIDENTS .....	41
FIGURE 32 – ROUNDS FIRED PER ID-AA OFFICER .....	42
FIGURE 33 – ROUNDS FIRED PER ID-AA INCIDENT .....	42
FIGURE 34 – RACE, ID-AA OFFICERS VS DEPARTMENT STAFFING .....	43

FIGURE 35 – YEARS OF SERVICE, ID-AA OFFICERS VS DEPARTMENT STAFFING .....	44
FIGURE 36 – RANK, ID-AA OFFICERS VS DEPARTMENT STAFFING .....	44

#### **PART IV: UNINTENTIONAL DISCHARGE**

FIGURE 37 – RACE, UNINTENTIONAL DISCHARGES VS DEPARTMENT STAFFING.....	47
FIGURE 38 – YEARS OF SERVICE, UNINTENTIONAL DISCHARGES VS DEPARTMENT STAFFING .....	48
FIGURE 39 – RANK, UNINTENTIONAL DISCHARGES VS DEPARTMENT STAFFING .....	48

#### **PART V: UNAUTHORIZED USE OF A FIREARM**

FIGURE 40 – POLICE OFFICER SUICIDES BY FIREARM .....	51
--	----

#### **PART VI: MISTAKEN IDENTITY**

#### **APPENDICES**

FIGURE 41 – OFFICERS SHOT AND INJURED BY SUBJECTS, 1971-2015 .....	56
FIGURE 42 – OFFICERS SHOT AND KILLED BY SUBJECTS, 1971-2015 .....	56
FIGURE 43 – SUBJECTS SHOT AND INJURED, 1971-2015.....	57
FIGURE 44 – SUBJECTS SHOT AND KILLED BY OFFICERS, 1971-2015 .....	57
FIGURE 45 – TOTAL SHOTS FIRED, 1971-2015 .....	58
FIGURE 46 – TOTAL SHOOTING INCIDENTS INVOLVING OFFICERS, 1971-2015.....	58
FIGURE 47 – CENTER MASS DIAGRAM .....	60
FIGURE 48 – GUNFIRE IN NEW YORK CITY, 2015 .....	65
FIGURE 49 – SUBJECTS WOUNDED BY OFFICER, 2010-2015 .....	66
FIGURE 50 – SUBJECTS KILLED BY OFFICERS, 2010-2015 .....	66
FIGURE 51 – FIREARMS DISCHARGE INCIDENTS BY DAY, 2015 .....	67
FIGURE 52 – FIREARMS DISCHARGE INCIDENTS BY MONTH, 2015 .....	67
FIGURE 53 – FIREARMS DISCHARGE INCIDENTS BY BOROUGH, 2015 .....	67
FIGURE 54 – FIREARMS DISCHARGE INCIDENTS BY PRECINCT, MANHATTAN, 2015 .....	68
FIGURE 55 – FIREARMS DISCHARGE INCIDENTS BY PRECINCT, BRONX, 2015 .....	69
FIGURE 56 – FIREARMS DISCHARGE INCIDENTS BY PRECINCT, BROOKLYN, 2015 .....	70
FIGURE 57 – FIREARMS DISCHARGE INCIDENTS BY PRECINCT, QUEENS, 2015 .....	71
FIGURE 58 – FIREARMS DISCHARGE INCIDENTS BY PRECINCT, STATEN ISLAND, 2015.....	72
FIGURE 59 – FIREARMS DISCHARGE INCIDENTS BY PRECINCT, OUTSIDE CITY, 2015.....	72
FIGURE 60 – FIREARMS DISCHARGE INCIDENTS BY LOCATION, 2015 .....	72
FIGURE 61 – FIREARMS DISCHARGE INCIDENTS BY OFFICER DUTY STATUS, 2015 .....	72
FIGURE 62 – ID-AC INCIDENTS, 2015.....	73

## Part I: Overview

## Introduction

One of the most traumatic and life-changing incidents that can occur in the course of a police officer's career is the line-of-duty discharge of his or her firearm. In an effort to guarantee that these incidents only occur when necessary, and thus prevent avoidable Member of Service (MOS) and civilian trauma, the Department began collecting in-depth data of police related firearms discharges in 1971. Today, the Department records all officer-related discharges, whether purposeful, accidental, or, more rarely, criminal, as well as discharges of a police firearm by a third party.

Analysis of these data over more than four decades has indelibly altered the way that officers respond to, engage in, and assess the need for firearms discharges. By making oversight manifest, the Department has made it clear that each and every firearm discharge is a matter of immediate concern. When recordkeeping began in 1971, 12 officers were shot and killed by another person, and 47 officers were shot and injured. In turn, officers shot and mortally wounded 93 subjects, with a further 221 subjects injured by police gunfire. In 2015, by contrast, two officers were shot and killed by another person, and three were injured, while police shot and fatally wounded eight subjects and injured 15. Information gleaned from these reports has initiated a Department-wide tactical, strategic, and cultural shift with regard to how officers use and control their firearms. The Department has made restraint the norm.

Today, these reports serve as a statistical engine for the development of training, the adoption of new technology, and the deployment of Department resources. New instructional scenarios are implemented as a result of this analysis and new hardware—from bullet-resistant vests to conducted energy weapons—has been introduced.

Tracking how, when, where, and why officers discharge their weapons is an invaluable tool for working towards the Department's ultimate goal of guaranteeing that, for every discharge, no option existed other than the use of a firearm.

## Use of Force

Police officers are among a select few to whom society has granted the right to use force in the course of their duty. Under New York State law, police may use force to effect an arrest or prevent an escape, as well as to protect life and property. With certain very specific exceptions, a private citizen's ability to resort to force is limited to self-defense and is also predicated on first exhausting all attempts at retreat. Police, on the other hand, are not only obligated to stand their ground, but required to pursue fleeing perpetrators and use force, if necessary, to terminate that flight.

An officer's role encompasses service, crime control, and order maintenance; the last two regularly require officers to issue instructions and orders. Compliance in these matters is not optional. The vast majority of police encounters involve nothing more than words, but when words are insufficient—when people choose to ignore or actively resist police—officers have an ascending array of force options to induce others to submit to their lawful authority.

These options extend from professional presence up through verbal force, physical force, non-impact weapons (e.g., pepper spray), conducted energy weapons, impact weapons (e.g., batons), and deadly physical force. All of these are tools at the officer's disposal. The officer is under no obligation to move sequentially from one to the next; he or she may transition from verbal force to pointing a firearm—or vice versa—if the situation dictates.

Federal case law (*Tennessee v. Garner*, 471 U.S. 1 (1985) and *Graham v. Connor*, 490 U.S. 386 (1989)) delineates a standard of “objective reasonableness” that restricts an officer’s prerogative to compel or constrain another citizen. But *Tennessee v. Garner* affirmed an officer’s right to use force against certain suspects, stating that if a fleeing suspect were to inflict or threaten anyone with serious physical harm, the use of deadly force would “pass constitutional muster.”

The New York State Penal Law, for its part, allows an officer to use physical force only when he or she “reasonably believes such to be necessary” to effect arrest, prevent escape, or defend a person or property from harm. Additionally, the State limits an officer’s ability to exercise deadly physical force even further. Penal Law §35.30(1) provides that police may only use deadly physical force against a subject in three instances:

- 1) When the subject has committed or is attempting to commit a felony and is using or about to use physical force against a person, or when the subject has committed or is attempting to commit kidnapping, arson, escape, or burglary;
- 2) When an armed felon resists arrest or flees; and
- 3) When the use of deadly physical force is necessary to defend any person from “what the officer reasonably believes to be the use or imminent use of deadly physical force.”

The use of deadly physical force, then, is properly restricted by statute. But NYPD policy represents an even more stringent guideline, and the Department goes further than the law in its efforts to control the use of force by its personnel. State law, for example, allows the use of deadly physical force to protect property

(e.g., to prevent or terminate arson or burglary); the Department does not. Additionally, according to the laws of New York State, it is lawful for an officer to shoot at the driver of a vehicle who is using the vehicle so that it poses an imminent threat of deadly physical force. However, such a firearms discharge would violate Department guidelines.

NYPD policy emphasizes that “only the amount of force necessary to overcome resistance will be used,” and “excessive force will not be tolerated,” (Patrol Guide 203-11). Regarding the use of deadly physical force, Department policy states, “uniformed members of the service should use only the minimal amount of force necessary to protect human life,” (Patrol Guide 203-12).<sup>1</sup>

## Guidelines for the Use of Firearms

To ensure that officers use only the minimal amount of force, the Department has nine rules that guide a New York City police officer in his or her use of deadly physical force and discharging a firearm. They are as follows:

- 1) Police officers shall not use deadly physical force against another person unless they have probable cause to believe they must protect themselves or another person present from imminent death or serious physical injury.
- 2) Police officers shall not discharge their weapons when, in their professional judgment, doing so will unnecessarily endanger innocent persons.
- 3) Police officers shall not discharge their weapons in defense of property.
- 4) Police officers shall not discharge their weapons to subdue a fleeing felon who presents no threat of imminent death or serious physical injury to themselves or another person present.
- 5) Police officers shall not fire warning shots.
- 6) Police officers shall not discharge their firearms to summon assistance except in emergency situations when someone’s personal safety is endangered and unless no other reasonable means is available.
- 7) Police officers shall not discharge their firearms at or from a moving vehicle unless deadly physical force is being used against the police officer or another person present, by means other than a moving vehicle.
- 8) Police officers shall not discharge their firearms at a dog or other animal except to protect themselves or another person from physical injury and there is no other reasonable means to eliminate the threat.
- 9) Police officers shall not, under any circumstances, cock a firearm. Firearms must be fired double action at all times.

---

<sup>1</sup> In June of 2016, the Department announced the implementation of a new series of Patrol Guide procedures concerning the use of force, from physical force to firearms discharges. Patrol Guide series 221 revised and replaced 203-11 and 203-12.

## Reasonableness

An officer's permission to use force is not unlimited. According to the law, as well as the Department's regulations, officers may exercise only as much force as they believe to be reasonably necessary.

Police officers are regularly exposed to highly stressful, dangerous situations. The risks they face and the experience they gain are appreciated and conceded by those who write and interpret the law. In *Brown v. United States*, 256 U.S. 335 (1921), Justice Oliver Wendell Holmes, Jr. noted that "detached reflection cannot be demanded in the presence of an uplifted knife." Sixty-eight years later, in *Graham v. Connor*, 490 U.S. 386 (1989), the Supreme Court wrote that "the 'reasonableness' of a particular use of force must be judged from the perspective of a reasonable officer on the scene, rather than with the 20/20 vision of hindsight." And in *People v. Benjamin*, 51 NY2d 267 (1980), the New York State courts observed that "it would, indeed, be absurd to suggest that a police officer has to await the glint of steel before he can act to preserve his safety."

These rulings explicitly acknowledge the strain under which officers make life-or-death use-of-force decisions. The law should and does provide latitude for those who are delegated the authority to enforce the law and maintain public order.

## Training

Latitude is not unrestricted discretion; rather, it is an admission that reasonableness is fluid. In order to make the right decision about whether and how to use deadly force, an officer in these situations relies on nerve, judgment, skill, and most importantly, training. It is training that sets the officer apart from the civilian, and is an anchor in those dangerous situations that most people never face.

The NYPD Training Bureau is in the process of developing an annual in-service training program. In-service training options will include sessions on the latest tactics, de-escalation strategies, intervention skills, and changes in the law and police procedures, as well as ways to positively interact and collaborate with community members. The first iteration of this program commenced in July 2015, and concluded in June 2016; comparable programs will continue on an annual basis moving forward. Program content will include tactical skills that emphasize the "3 Cs" – Cover, Concealment and Containment – as well as a critical fourth "C" which is Communication. As much as possible, officers and supervisors will be trained by platoon in the company of officers with whom they usually work and during the hours that they usually perform duty. Platoon training will prevent needless and disruptive changes to officers' schedules and have the added benefit of reinforcing situational awareness, team tactics and decision-making among a group of officers who usually work together.

## Investigation and Review Process

The New York City Police Department recognizes the serious nature of police-involved firearms discharges and seeks to record and evaluate every incident. The mandate for recordkeeping was first published in Department Order SOP 9 (s. 1969), but the intervening forty-six years have greatly refined the NYPD's process. In 2015, investigations were conducted in accordance with two guiding documents: 1) Patrol

Guide Procedure 212-29; and 2) a handbook entitled, "The Firearms Discharge Investigation Manual; The NYPD Guide to the Preparation of a Shooting Incident Report."

## **The Shooting Team<sup>2</sup>**

When an officer discharges his or her firearm, whether on or off-duty, or when a firearm owned by an officer is discharged by another person, a patrol supervisor responds to the incident, takes command of the scene, and secures and inspects the involved officer's firearm. He or she also immediately notifies the desk officer, who in turn notifies the Patrol Borough command and Operations Unit. A Patrol Borough Shooting Team, led by a shooting-team leader in the rank of captain, is then dispatched. The shooting team is an ad hoc entity that may be comprised of personnel from investigatory units, community affairs units, the Emergency Service Unit, the Firearms and Tactics Section, and/or any other personnel whose training or expertise may prove valuable to the pending investigation.

The shooting-team leader, under the supervision of an inspector, undertakes an in-depth examination of the discharge incident, beginning by contacting and conferring with the District Attorney. In many cases, including nearly every case in which a subject is killed or injured, the District Attorney will advise that any officer who discharged their weapon should not be interviewed, in order to preserve the integrity of the grand jury process. Whether or not the District Attorney allows an interview, the shooting-team leader will, in every instance, direct the officer who discharged their weapon to prepare a Firearms Discharge/Assault Report, or FDAR.

If a discharge causes death or injury, the officer who fired is required to submit to an Intoxilyzer 5000EN test to determine whether there is any alcohol in their system. He or she is also automatically reassigned to an administrative position for a minimum of three consecutive work days. Investigations into discharges that cause death or injury are supervised by executives in the rank of Chief.

If the discharge incident appears legally or administratively problematic, or if malfeasance is suspected, the shooting-team leader, in conjunction with personnel from the Internal Affairs Bureau, will remove the shooting officer's weapon and modify or suspend his or her duty status. An officer's weapon must also be removed in all instances of self-inflicted injury (absent extenuating circumstances).

Each shooting investigation is thorough and exhaustive, and includes canvasses, witness interviews, subject interviews, evidence collection, crime-scene sketches and investigation, hospital visits, and firearms/ballistics analyses. Afterwards, all available investigatory results are collated into a Shooting Incident Report and forwarded to the Chief of Department, the highest ranking uniformed member of the NYPD, ordinarily within 24 hours of the incident.

---

<sup>2</sup> Beginning in July of 2015, the NYPD abolished the shooting team model and replaced it with an investigatory unit; known as the Force Investigation Division (FID) dedicated to officer-involved shootings. See page 9.

## The Shooting Incident Report

A preliminary report (usually written within eight hours of the occurrence) outlines, as much as possible, the shooting incident; however, the rapidly evolving nature of shooting investigations means the report is unavoidably preliminary. The primary means of mitigating this is via the use of the Firearms Discharge Investigation Manual.<sup>3</sup>

The manual, in its current incarnation, is a 72-page instruction manual that provides a template by which shooting-team leaders can produce accurate, data-rich Shooting Incident Reports in a timely manner. It ensures that pertinent questions are asked and relevant avenues of investigation are pursued, even in the wake of a dynamic, sometimes chaotic, incident. Firearms discharges, especially those that occur during adversarial conflict, can be tremendously complex events. The Firearms Discharge Investigation Manual functions as a checklist, promoting both uniformity and specificity.

Each Shooting Incident Report should end with a statement, made with appropriate caveats, assessing whether or not the discharge was consistent with Department guidelines and whether or not the involved officers should be subject to Departmental discipline. Often, if involved officers have not been interviewed, the shooting-team leader may not make a determination, but rather state that the investigation is ongoing. This does not preclude the shooting-team leader from offering a tentative determination or from commenting on the apparent tactics utilized during the incident.

## The Final Report

Within 90 days of the incident, the commanding officer of either the Precinct of occurrence or the applicable Borough Investigations Unit prepares a finalized version of the Shooting Incident Report. This final report is a reiteration of the original, but includes any clarifications or re-evaluations that may have been developed in the meantime. Because of the speed with which the initial report is prepared, tentative data are unavoidable. Accordingly, the final report will contain material that was not initially available to the shooting team leader (e.g., detective's case files, forensic results, medical reports, etc.).

When discharges that occur during adversarial conflict involve injury or death to a subject, the final report often cannot be finished within the 90-day period. Instead, the final report must wait until the investigation into the incident has been completed, or at least until the District Attorney from the county of occurrence has permitted the officer or officers who discharged to be interviewed. At times, it must wait even longer, until all relevant legal proceedings have been concluded.

If a final report is delayed, whether because of ongoing legal proceedings or incomplete investigations, the Borough Investigations Unit submits monthly interim status reports. Once the final report is finished, it is forwarded, through channels, to the Chief of Department.

---

<sup>3</sup> This reporting process was applicable for the first half of 2015.

## Review

After a firearms discharge has been investigated, the final report prepared, and after the District Attorney's office has determined whether the incident requires prosecutorial action, the NYPD initiates a tertiary examination to assess the event from a procedural and training perspective and, if necessary, to impose discipline. This third layer of oversight is under the purview of the Firearms Discharge Advisory Board and the Firearms Discharge Review Board.

## The Borough Firearms Discharge Advisory Board

The review of firearms discharges is two-tiered and conducted at the Patrol Borough and executive levels. Members of the Patrol Borough Firearms Discharge Advisory Board (FDAB) are supervisors assigned to the Patrol Borough command, in which the incident occurred, with oversight over the Precinct. This board further scrutinizes the incident with the benefit of new material contained in the final report. Based on the accumulated evidence, the Patrol Borough FDAB issues preliminary findings regarding whether or not the officer's actions violated the Department's firearms guidelines or use-of-force policy. The preliminary findings, along with a preliminary disciplinary recommendation, are appended to the final report and presented to the Chief of Department's Firearms Discharge Review Board (FDRB) for determination.

## The Chief of Department's Firearms Discharge Review Board

The FDRB issues determinations concerning the tactics used during the incident, the propriety of the officer's actions, and the disciplinary action to be taken, if any. The FDRB gives due consideration to, and at times concurs with, the original recommendations of the shooting-team leaders and the subsequent findings and recommendations of the Borough Advisory Board, but in some cases it overrides, alters, or clarifies the preceding assessments and arrives at new, more accurate findings or more appropriate disciplinary results.

The Chief of Department then produces a Final Summary Report, which is a single document that memorializes and synthesizes the whole exhaustive investigation-and-review process. It is then presented to the Police Commissioner.

## The Police Commissioner

The final decision in all matters related to these incidents rests with the Police Commissioner. Using the recommendations from the Advisory and the Review Boards, the Police Commissioner makes a final determination regarding the incident. Once the Commissioner has issued this final determination, the incident is considered closed. The results of the 2015 findings are published throughout this report.

## Force Investigation Division

As of July 1, 2015, under the supervision of the First Deputy Commissioner, the Force Investigation Division (FID) is the sole unit responsible for investigating all aspects of firearms discharges by members of the service and deaths in custody related to police activity. FID is comprised of seasoned supervisors and investigators, many of whom have been involved in officer-involved shootings. Their purpose is to maximize the timeliness, transparency, and thoroughness of investigations into officer-involved shootings.

Investigations into officer involved shootings are multi-faceted. The duties and responsibilities of FID personnel include the building of prosecutorial cases against perpetrators involved in criminal acts against officers, as well as assessing the culpability of officers' actions and determining if they comply with New York State Law, and adhere to Department guidelines with regard to their application of deadly physical force. The completed investigations are presented to the First Deputy Commissioner's Use of Force Review Board for final determination. This Board is chaired by the First Deputy Commissioner and has officially absorbed the duties and responsibilities of the Borough Firearms Discharge Review Board and Chief of Department's FDRB.

Investigators take an objective look at the circumstances of discharges as they relate to the tactics employed, equipment available, and what can be learned and improved upon from these rapidly unfolding incidents. A team of investigators assesses strategies, creates lesson plans, and lectures in-service audiences so that members performing enforcement duty are made aware of best practices and tactical concerns in a timely manner.

## Anatomy of a Firearms Discharge Investigation

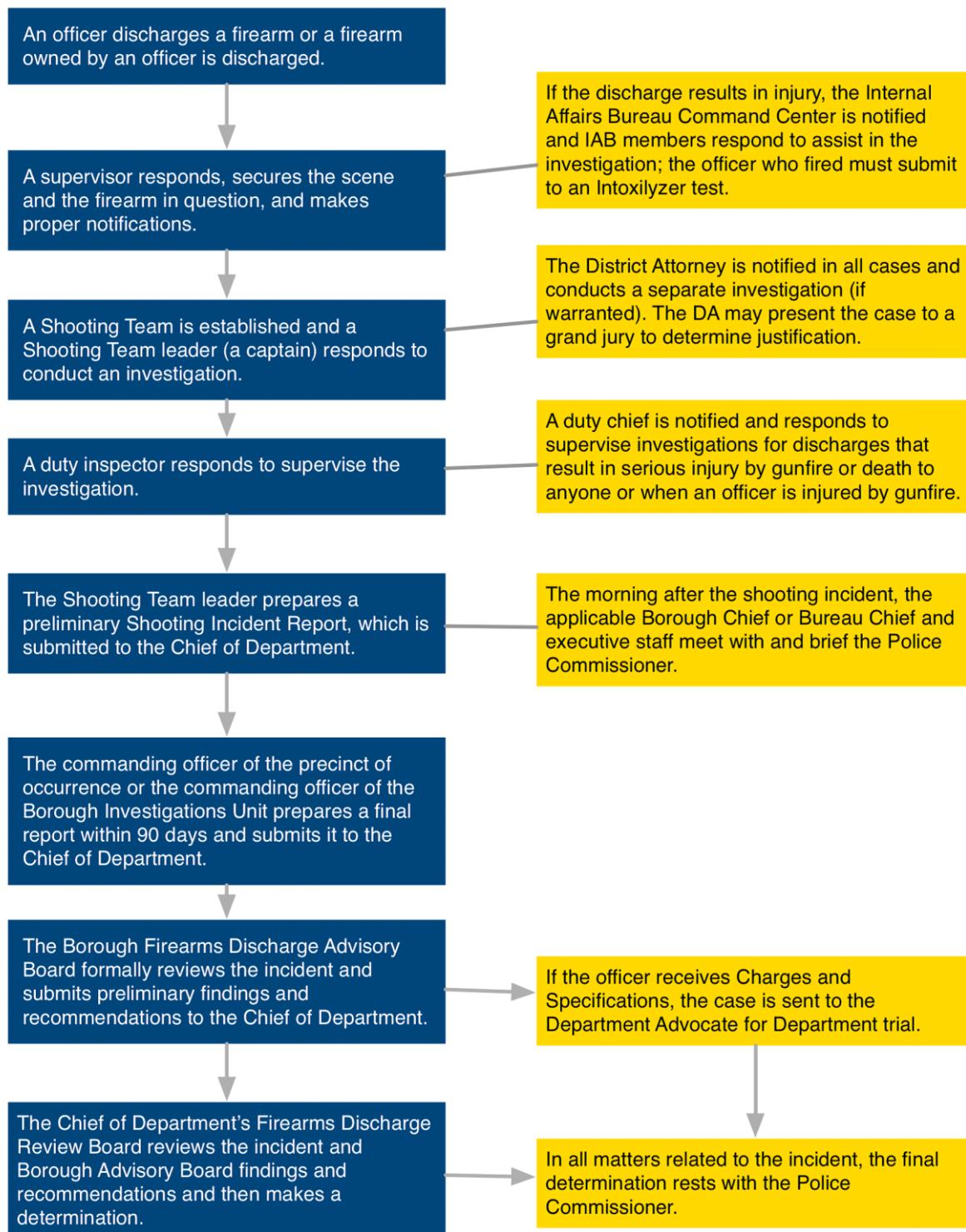


Figure 1

\*The Department adopted a new model midway through 2015. The 2016 AFDR will reflect the new model as 2016 is the first full year of use.

## Glossary

Officer	A uniformed member of the New York City Police Department of any rank.
Subject	A person engaged in adversarial conflict with an officer or a third party, which results in a firearms discharge.
Civilian	A person who is not the subject of an adversarial conflict, but is a crime-victim, bystander, and/or injured person.
Firearms Discharge	An incident in which an officer discharges any firearm, or when a firearm belonging to an officer is discharged by any person, excluding discharges during authorized training sessions, lawful target practice, or at a firearms safety station within a Department facility.
Intentional Discharge – Adversarial Conflict	An incident in which an officer intentionally discharges a firearm in defense of self, or another, during an adversarial conflict with a subject, including those inside the scope of the officer's employment but outside Department guidelines. This does not include a discharge against an animal attack.
Mistaken Identity Discharge	An incident in which an officer intentionally discharges a firearm at another law-enforcement officer whom the discharging officer mistakenly believes to be a criminal. This does not include crossfire incidents in which a discharging officer unintentionally strikes another officer.
Intentional Discharge – Animal Attack	An incident in which an officer intentionally discharges a firearm in defense of self, or another, against an animal attack, including those inside the scope of the officer's employment but outside Department guidelines.
Intentional Discharge – No Conflict	An incident in which an officer intentionally discharges a firearm to summon assistance, including those inside the scope of the officer's employment but outside Department guidelines.
Unintentional Firearms Discharge	An incident in which an officer discharges a firearm without intent, regardless of the circumstance.
Unauthorized Use of a Firearm	An incident in which an officer intentionally discharges a firearm without proper legal justification and/or outside the scope of the officer's employment, or an incident in which an unauthorized person discharges an officer's firearm. This includes suicides.
Use/Threaten the Use of a	A contributing factor to a firearms discharge in which a subject discharges

## 2015 Annual Firearms Discharge Report

Firearm	or threatens to discharge a firearm by displaying a firearm or what reasonably appears to be a firearm, or by simulating a firearm or making a gesture indicative of threatening to use a firearm.
Firearm	A pistol, revolver, shotgun, or rifle, including a variation of any of these (e.g., a sawed-off shotgun, etc.).
Imitation Firearm	Any instrument that is designed to appear as if it were a firearm, or modified to appear as if it were a firearm, including air pistols, toy guns, prop guns, and replicas.
Use/Threaten the Use of a Cutting Instrument	A contributing factor to a firearms discharge in which a subject cuts, stabs, or slashes a person with any cutting instrument or threatens or attempts to do the same while armed with a cutting instrument or what reasonably appears to be a cutting instrument.
Cutting Instrument	Any knife, razor, sword, or other sharp-edged object such as a broken bottle.
Use/Threaten the Use of a Blunt Instrument	A contributing factor to a firearms discharge in which a subject strikes another person with a blunt instrument or threatens or attempts to do the same while armed with a blunt instrument or what reasonably appears to be a blunt instrument.
Blunt Instrument	Any bat, stick, pipe, metal knuckles, or object which, when used as a weapon, can cause blunt-force injury to a person, including motor vehicles and unbroken bottles.
Use/Threaten the Use of Overwhelming Physical Force	An incident in which an unarmed subject physically attacks a person or threatens or attempts to do the same, and by doing so puts the victim at risk of serious physical injury or death, including gang assaults, attempts to push a person from a roof or train platform, and attempts to take an officer's firearm.

Historical Snapshot, 2005-2015												
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
<b>Adversarial Conflict</b>	59	59	45	49	47	33	36	45	40	35	33	
<b>Animal Attack</b>	32	30	39	30	28	30	36	24	19	18	15	
<b>Unintentional Discharge</b>	25	26	15	15	23	21	15	21	12	18	15	
<b>Mistaken Identity</b>	0	1	0	0	1	0	0	0	0	0	0	
<b>Unauthorized Use of a Firearm</b>	6	8	6	3	4	6	2	6	2	4	2	
<b>MOS Suicide/Attempted Suicide</b>	3	3	6	8	3	2	3	9	8	4	2	
<b>Total</b>	125	127	111	105	106	92	92	105	81	79	67	

Figure 2



Figure 3

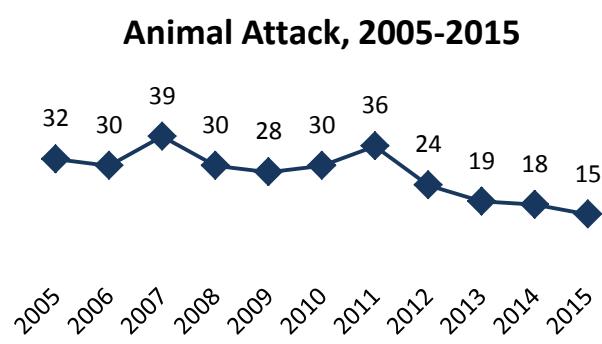


Figure 4

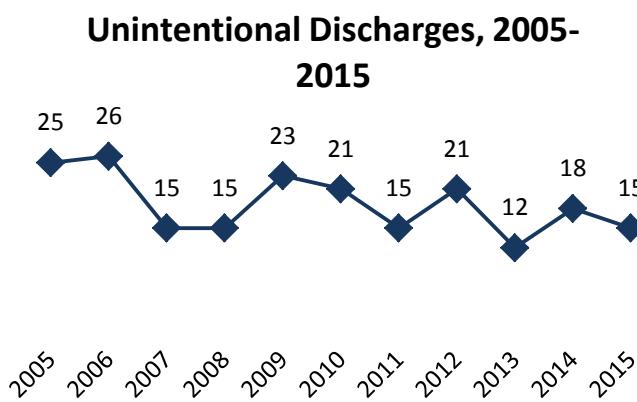


Figure 5

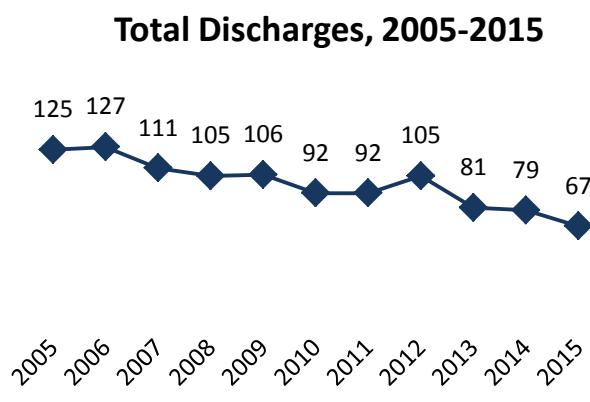


Figure 6

2014 vs. 2015 Snapshot			
Category	2014	2015	Change
Intentional Discharge - Adversarial Conflict	35	33	-5.7%
Intentional Discharge - Animal Attack	18	15	-16.7%
Unintentional Discharge	18	15	-16.7%
Unauthorized Use of a Firearm (Including Suicide)	8	4	-50.0%
<b>Total Firearms Discharges</b>	<b>79</b>	<b>67</b>	<b>-15.2%</b>
Total Officers Firing	104	89	-14.4%
Total Shots Fired	315	351	11.4%
Total Officers Shot and Injured by Subjects	2	3	50.0%
Total Officers Shot and Killed by Subjects	2	2	0.0%
Total Subjects Shot and Injured by Officers during ID- AC	14	15	7.1%
Total Subjects Shot and Killed by Officers during ID-AC	8	8	0.0%

Figure 7

<b>2015 by Category</b>	
<b>Intentional Discharge - Adversarial Conflict</b>	
Subject Used/Threatened Use of a Firearm	23
Subject Used/Threatened Use of a Cutting Instrument	4
Subject Used/Threatened Use of a Blunt Instrument or Vehicle	2
Subject Used/Threatened Use of Overwhelming Physical Force	2
Perceived Threat	2
<b>Total</b>	<b>33</b>
<b>Intentional Discharge - Animal Attack</b>	
Dog Attack	15
Other Animal Attack	0
<b>Total</b>	<b>15</b>
<b>Unintentional Discharge</b>	
During Adversarial Conflict	1
Handling/Cleaning Firearm	14
<b>Total</b>	<b>15</b>
<b>Unauthorized Use of Firearm</b>	
Suicide	2
Attempted Suicide	0
Unauthorized Person Discharged Officer's Firearm	1
Other	1
<b>Total</b>	<b>4</b>
<b>Total Firearms Discharges</b>	<b>67</b>

Figure 7A

## 2015 Firearms Discharge Scope

2015 Firearms Discharge Scope	
New York Population (U.S. Census, 2015)	8,175,133
NYPD Average Annual Uniformed Staffing	35,217
Total Radio Assignments	4,580,537
Radio Assignments Involving Weapons	66,477
Gun Arrests	4,924
Criminal Shooting Incidents	1,138
Adversarial Conflict: Total Number of Officers Who Intentionally Fired	55
Adversarial Conflict: Total Number of Firearms Discharge Incidents	33
Subjects Shot and Injured during ID-AC	15
Subjects Shot and Killed during ID-AC	8
Officers Shot and Injured during ID-AC	3
Officers Shot and Killed	2

Figure 8

## 2015 Report

### Total Firearms Discharges

In 2015, the Department continued to experience a decline in discharge incidents (See Figure 2). In fact, 2015 was the lowest recording of discharge incidents since official recording began in 1971. In particular, total discharges decreased 40% since 2007, when the new reporting model began, and 15% since 2014 (see Figure 7). Likewise, the most serious category of discharges (Intentional Discharge – Adversarial Conflict) also mirrors this trend, down 27% since 2007, and 5.7% since 2014 (see Figure 7). Approximately 35,000 uniformed officers police the City's 8.2 million residents; of approximately 35,000 uniformed members, 55 officers were involved in a total of 33 incidents of intentional firearms discharges during adversarial conflict, resulting in 15 injured subjects, and eight killed (see Figure 8).

These data are a testament to NYPD police officers' restraint, diligence, and honorable performance of duty. They also show that, over the past four decades, attacks on both police and citizens have steadily declined. The drastic reduction in violent crime over the past 25 years is sociologically reflexive: as crime decreases, criminals and police enter into less adversarial conflict.

This report is subdivided into five categories. Each category is analyzed based only on the information in that category, allowing the Department to understand specific types of incidents and adjust training and policy to continue to reduce them. Nevertheless, the relatively small sample studied for the report (67 discharge incidents, 33 in the Adversarial Conflict category) can limit the predictive value and conclusions that may be derived.

The report contains information compiled from preliminary and final Shooting Incident Reports, detective case files, medical examiner's reports, Firearms Discharge Assault Reports, arrest and complaint reports, Firearms Analysis Section reports, Firearms Discharge Review Board findings, and previous Annual Firearms Discharge Reports.

Because of rounding, some charts may not precisely equal 100%.

### Categories

- **Intentional Discharge – Adversarial Conflict:** when an officer intentionally discharges his or her firearm during a confrontation with a subject
- **Intentional Discharge – Animal Attack:** when an officer intentionally discharges his or her firearm to defend against an animal attack
- **Unintentional Discharge:** when an officer unintentionally discharges his or her firearm
- **Unauthorized Use of a Firearm:** when an officer intentionally discharges his or her firearm outside the scope of his or her employment, or when another person illegally discharges an officer's firearm

- **Mistaken Identity:** when an officer intentionally fires on another officer in the mistaken belief that the other officer is a criminal subject

The possibility of a sixth category, *Intentional Discharge – No Conflict*, exists, but its occurrence is extremely uncommon. *Intentional Discharge – No Conflict* involves an officer discharging his or her firearm to summon assistance. Because of the rarity of this type of discharge, it is not regularly tracked in the annual report, but is addressed on an as-it-occurs basis. In 2015, no such discharge occurred; no such discharge has occurred in more than a decade.

## Part II: Intentional Discharge – Adversarial Conflict

## Overview

There were 33 total incidents of intentional firearm discharges during adversarial conflict (ID-AC) in 2015, constituting a 5.7% decrease from 2014 (see Figure 7). In total, 55 officers were involved in these incidents, a 5.2% decrease from the previous year.

Forty-seven subjects were involved in ID-AC incidents in 2015, 23 of whom were shot in the course of the conflict, one more than the previous year where 22 subjects were shot (see Figure 7). Overall, the number of subject deaths as a result of ID-AC incidents remained unchanged from 2014 to 2015 (eight vs. eight).

Three officers were shot and injured by criminals in ID-AC incidents in 2015, one more than the previous year, and significantly lower than the 13 incidents recorded in 2012. Three officers were shot in two separate ID-AC incidents; of the three officers shot and injured, none suffered a wound that could have been mitigated by a bullet-resistant vest. There were two line-of-duty deaths by firearm in 2015, with one officer death during an ID-AC incident.<sup>4</sup> Also, no officers were struck by crossfire in 2015.

On six separate occasions, officers intervened during assaults on civilians (five involving a firearms attack and one during a knife assault).

## Dates and Times of Discharges

The distribution of ID-AC incidents was relatively consistent throughout the calendar year. Exceptions included February, with zero incidents for the entire month, July, which had one, and June, which had six. Two, three, or four incidents were recorded in every other month (see Appendix G). Overall, ID-AC incidents exhibited no discernible seasonal pattern in 2015.

ID-AC incidents were most likely to occur on either Wednesday or Friday of a given week (eight incidents each), with Sunday being the day that was least likely to incur an ID-AC incident (one incident). This is in contrast to 2014, which recorded Sunday as the day with the highest number of ID-AC incidents (ten incidents).

In 2015, approximately 40% of ID-AC incidents occurred during the third platoon (between 1531 hours and 2330 hours), while in the preceding year, 57% occurred on the third platoon (see Figure 9).

**ID-AC Incidents by Tour, 2015**

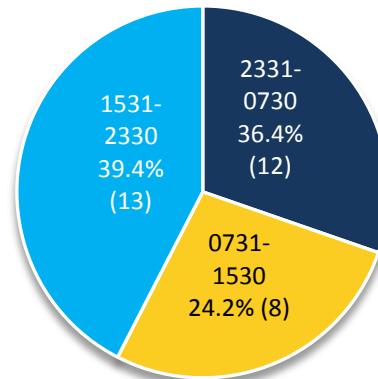


Figure 9

<sup>4</sup> Since the officers were unable to return gunfire in one incident, it was not recorded as an ID-AC incident and, therefore, not reflected in this report.

## Locations of Discharges

Most firearms discharges by members of the service transpire within the five counties comprising New York City. In 2015, 30 of the 33 ID-AC incidents occurred within City limits, with the remaining three occurring in Westchester County. Of the 30 within-City incidents, 17 of those occurred in Brooklyn. Each Borough experienced at least two ID-AC incidents; despite Brooklyn comprising over half of the 2015 total (see Figure 10).

ID-AC incidents occurred in 21 separate precincts throughout the City, seven of which had more than one incident. The 75<sup>th</sup> and 83<sup>rd</sup> Precincts were the only precincts with three distinct ID-AC incidents in 2015; this is a decrease from 2014, when a single precinct recorded five incidents.

### ID-AC Incidents by Location

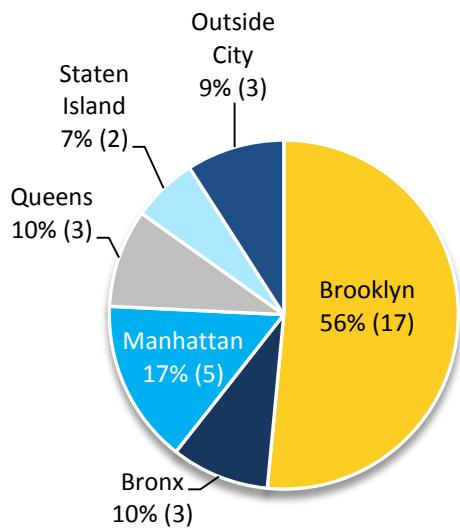


Figure 10

### Locations of Criminal Shootings

The locations of ID-AC incidents largely correspond with wider geographic crime patterns, which can be seen when comparing ID-AC locations to locations of criminal shootings. Figure 11 depicts the 30 ID-AC incidents overlaying the locations of the 1,138 criminal shootings that occurred in New York City in 2015. The map shows that police firearms discharges occur in those areas of the City already suffering from high gun violence. In addition, figure 12 depicts confirmed ShotSpotter incidents from March to December 2015. ShotSpotter is a relatively new technological innovation that cues officers to the locations where gunfire is erupting. Upon juxtaposition of figures 11 and 12, it is evident that the clustering of confirmed ShotSpotter detections correlates well with the location of ID-AC incidents.

Since introduction of the map depicting both criminal shooting incidents and ID-AC in the 2007 Firearms Discharge Report, this correlation has been generally preserved. The frequency of criminal gun activity within New York City directly, and proportionally, affects the frequency and location of police involved shootings; this proportionality is visible at the borough level in figure 13, although in 2015 Brooklyn showed an increase in the percentage of ID-AC incidents as compared to criminal shootings and the Bronx showed a decrease. However, the number of within the City ID-AC incidents (30) is comparatively small against the backdrop of Citywide criminal shootings, with police involved in less than 3% of total shootings for the City in 2015 (see Figure 14).

## 2015 Shooting Incidents and Intentional Discharges - Adversarial

### Legend

- Firearm Discharge - Adversarial (30) within NYC
- Shooting Incidents (1,138)
- Precinct Boundary

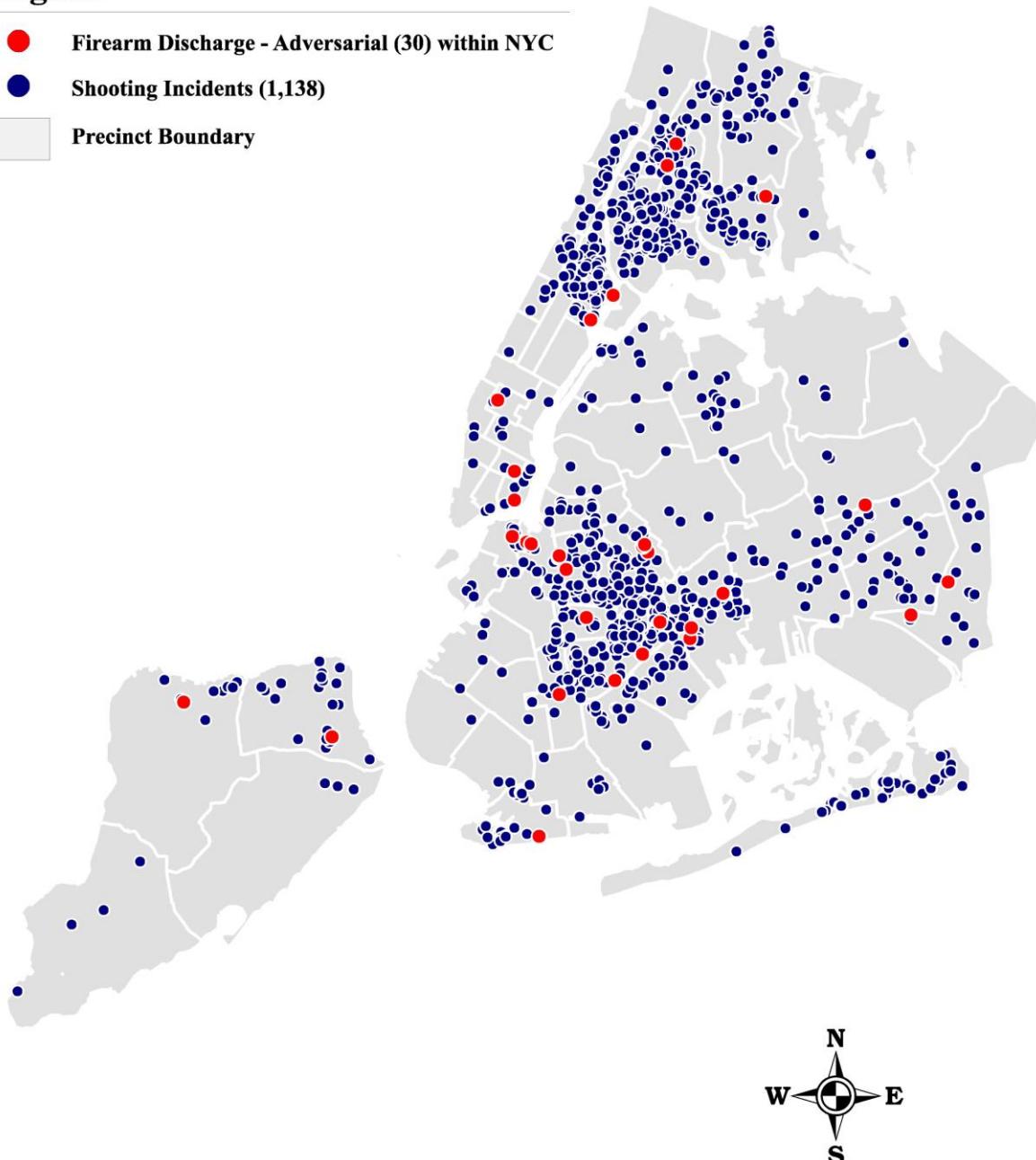


Figure 11

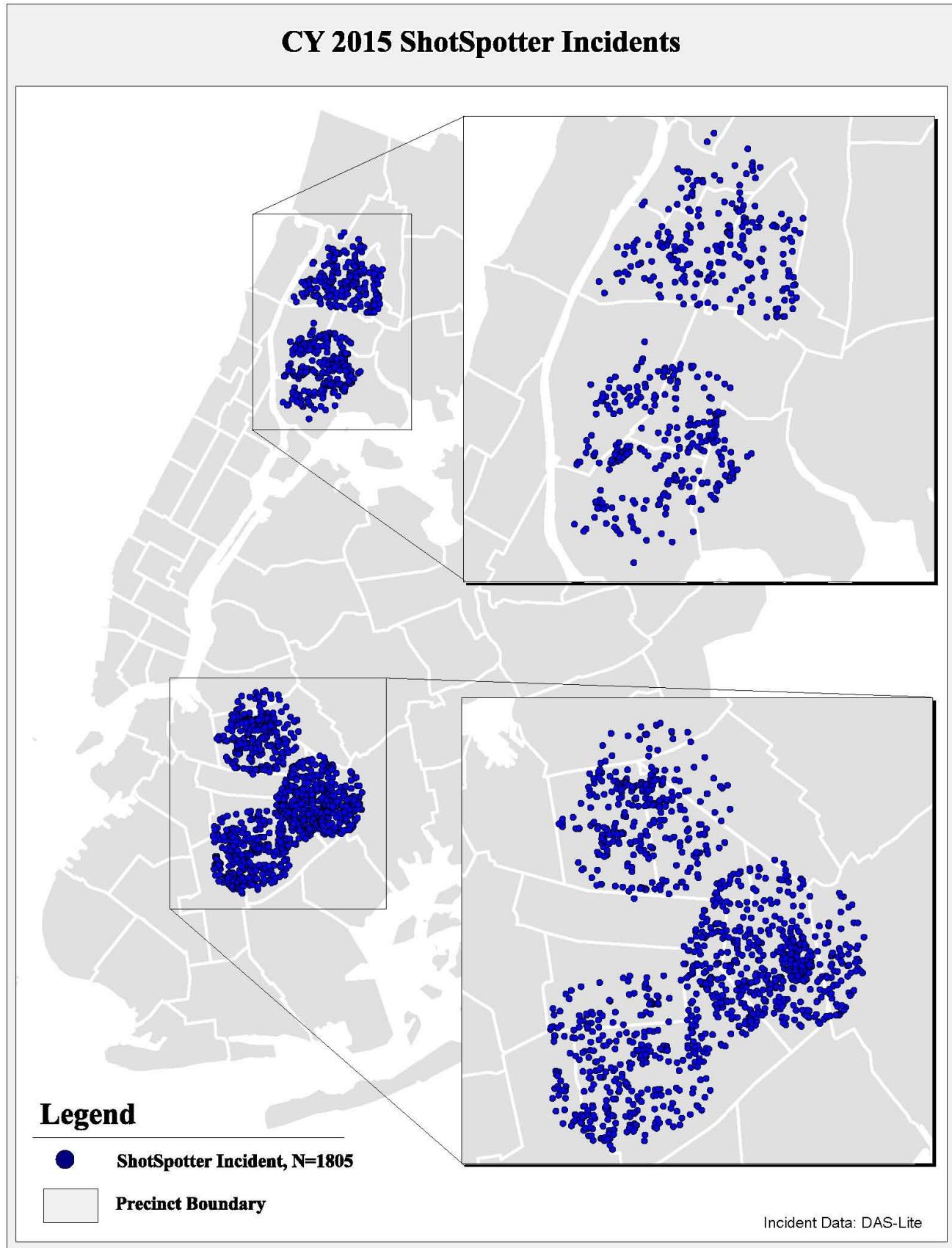


Figure 12

### ID-AC Incidents vs. Criminal Shooting Incidents, Percentage by Borough

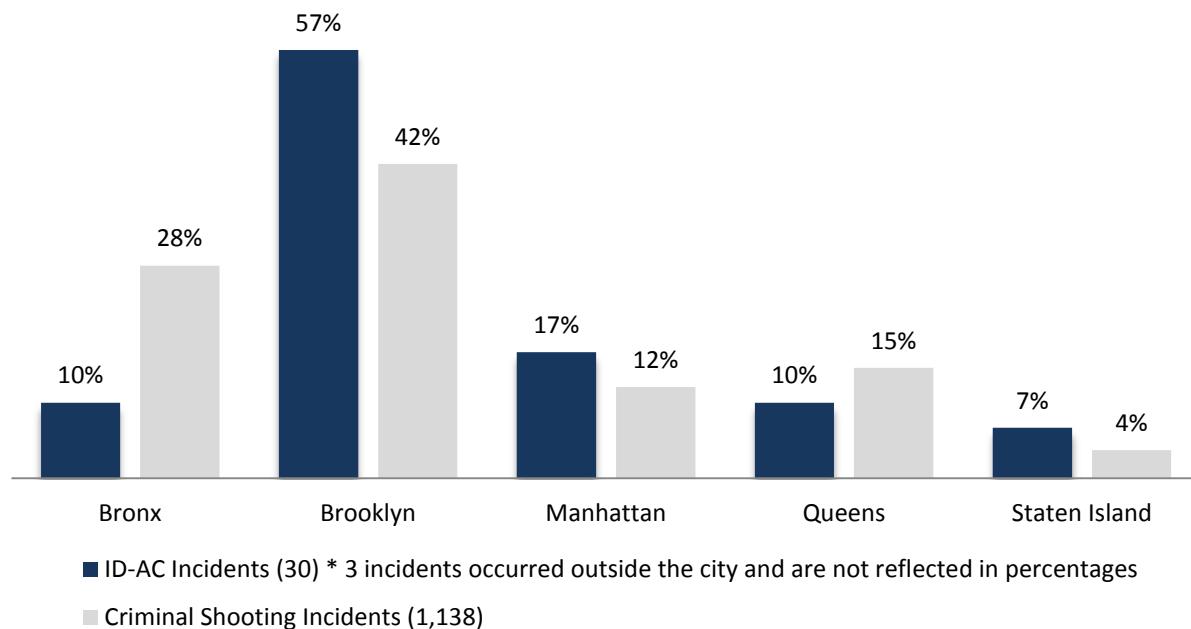


Figure 13

### ID-AC Incidents vs. Criminal Shooting Incidents, Frequency by Borough

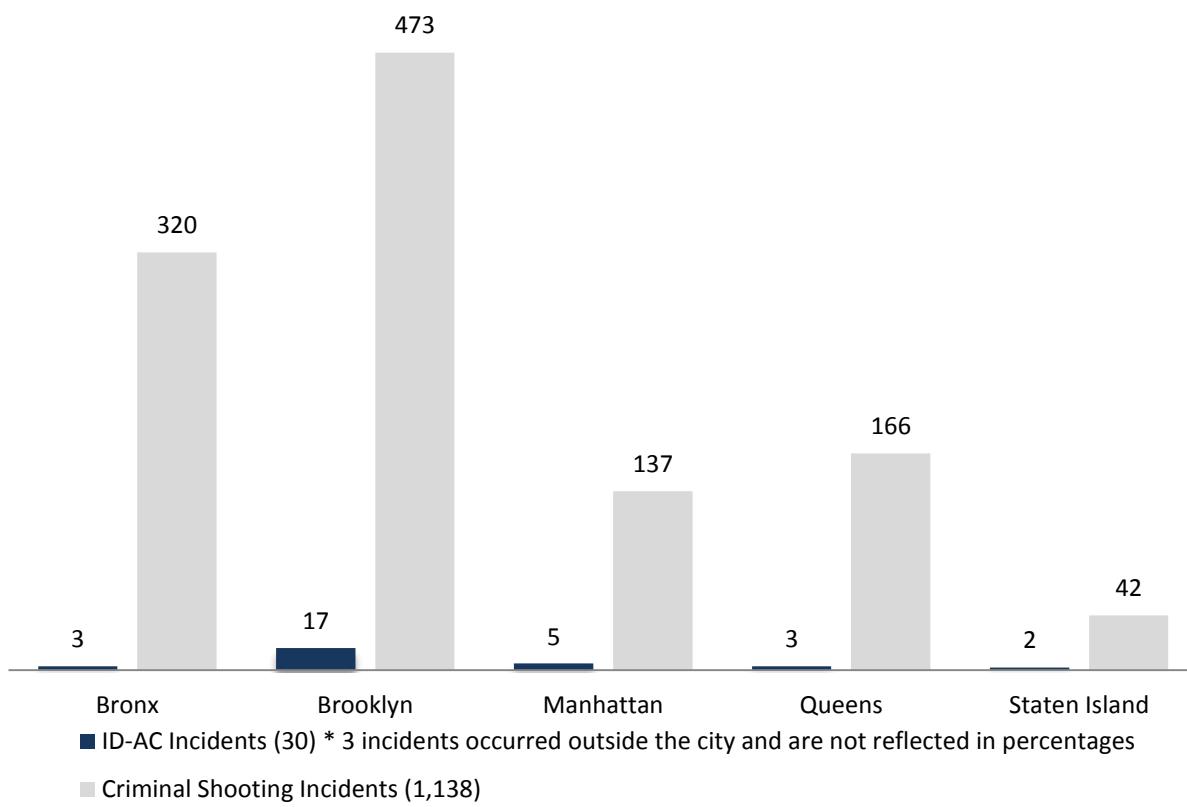


Figure 14

## Location Type

Of the 33 ID-AC incidents in 2015, 27 occurred in outdoor settings, primarily on streets and sidewalks, and the remaining six occurred indoors, encompassing residential buildings and their immediate areas (see Figure 15). Twenty-five within-City incidents occurred within the jurisdiction of the Patrol Services Bureau (PSB), with the remaining five on New York City Housing Authority (NYCHA) property.

Of the five ID-AC incidents that occurred on NYCHA property, four occurred in Brooklyn (encompassing the Van Dyke, Pennsylvania Avenue-Wortman Avenue, Lafayette Gardens, and Walt Whitman Houses) and one in Manhattan (Vladeck Houses). Of these, three incidents occurred outdoors, one occurred in an apartment, and the last in a stairwell.

### ID-AC Incidents by Location Type

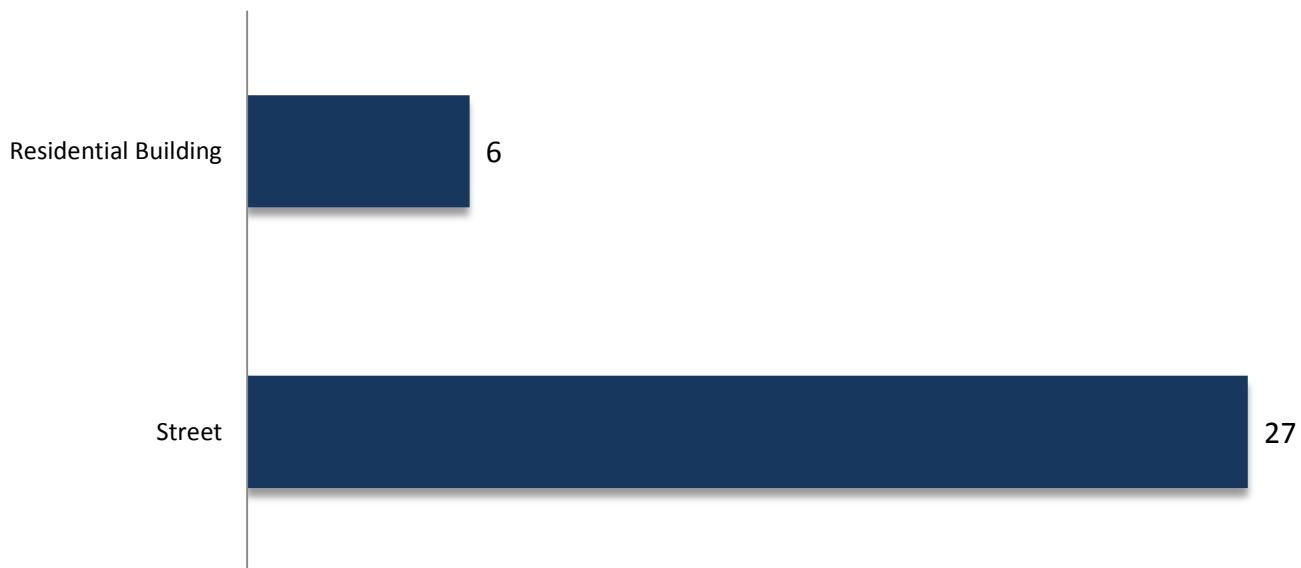


Figure 15

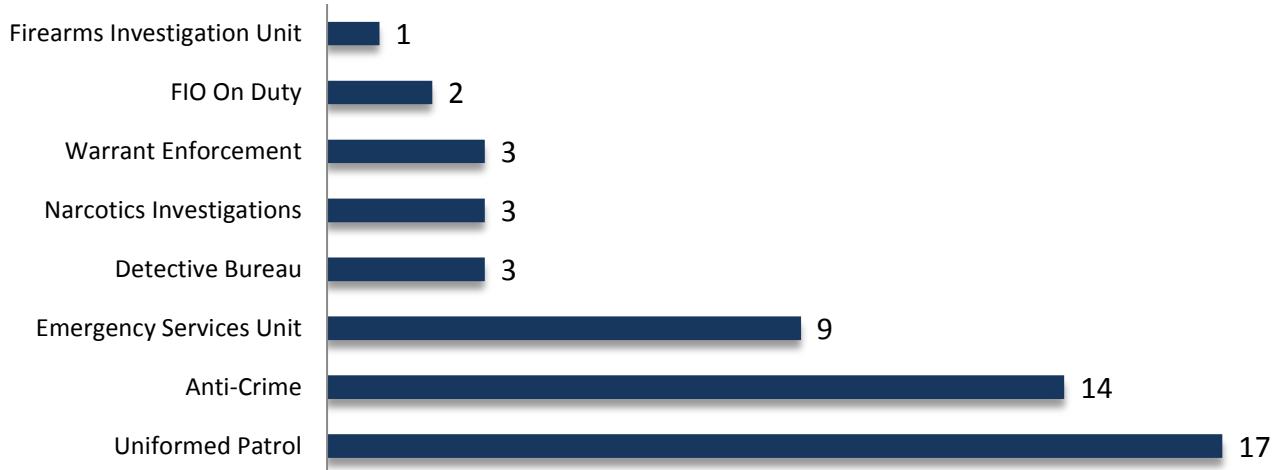
## Reasons Officer Involved

Fifty-five officers were involved in 33 discrete ID-AC incidents in 2015. The variety of officer motive is apparent given the variable nature of policing and the myriad functions that officers fulfill on a daily basis. Similar to 2014, the vast majority (95%) of ID-AC incidents involved officers who were on-duty. Three incidents involved officers who were off-duty. In two off-duty incidents, the officer was the victim of a robbery and in the third; the officer was the victim of a larceny. The majority of officers (55%) were in plainclothes or civilian attire at the outset of the incident. Uniformed officers accounted for 45% of ID-AC incidents, and approximately two-thirds (62%) were assigned to the Patrol, Transit, or Housing Bureaus.

Approximately 31% of officers were either on uniformed foot posts or in sector cars assigned to respond to 9-1-1 calls from the public when they became involved in ID-AC incidents (see Figure 16). Although officers assigned to specialty units (i.e., anti-crime) represent a small proportion of the Department's uniformed

personnel, roughly one-third of ID-AC incidents involved these officers. This is almost certainly attributable to their mandate to proactively pursue criminals rather than answer calls for service. The variety of scenarios that precipitated the involvement of these officers in ID-AC encounters is indicative of an officer's need for perpetual vigilance.

### On-Duty Officer Assignment, ID-AC Incidents



*Figure 16*

As discussed, the variety of situations precipitating officers becoming involved in ID-AC incidents was broad. The most common, constituting roughly one-third of all within-City incidents, was either a random pick-up assignment (i.e., pick-up shots fired), or 9-1-1 call involving shots fired while on routine patrol (see Figure 17). Over half of the within-City ID-AC incidents occurred as a result of pick-up assignments (i.e., situations that officers encounter on patrol without being directed to a location by a dispatcher), indicating that the majority of encounters are precipitated by officer observation of criminal activity in the field.

## Situations Precipitating On-Duty ID-AC Incidents

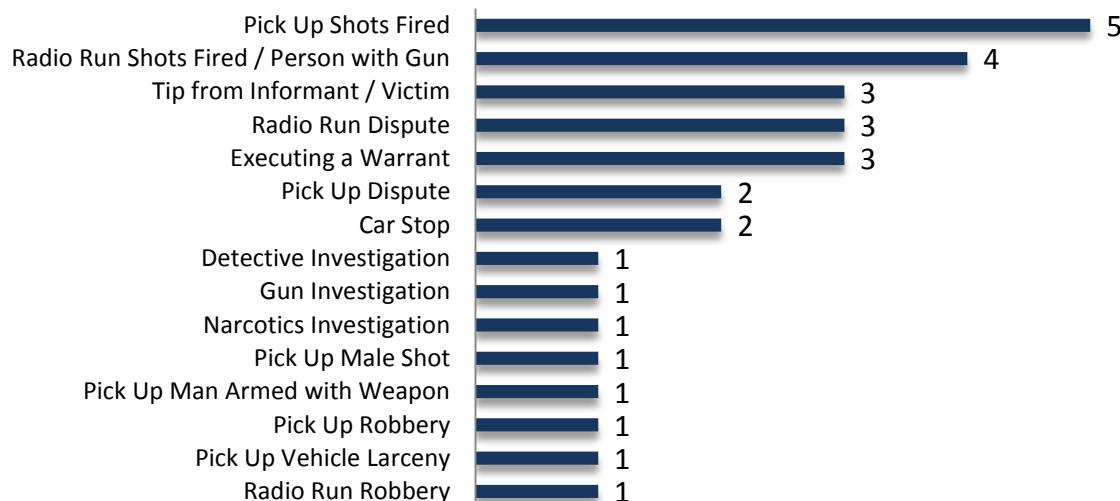


Figure 17

## Threat Type

Department policy requires officers who intentionally discharge their firearms during ID-AC incidents to do so only as a means of defending themselves or others from imminent serious physical injury or death.

The subjects involved in ID-AC incidents utilized a variety of weapons when confronting officers. Twenty subjects in 33 incidents possessed firearms: 15 were semi-automatic pistols, four were revolvers, and one was an assault rifle. Three subjects carried imitation firearms (BB guns and pellet guns). Four subjects were armed with knives. On one occasion, the subject utilized a blunt instrument (hammer), and during two incidents, officers perceived the threat of a weapon (subject reached for a knife and subject made gestures indicative of threatening the use of a firearm) (see Figure 18).

## Threat type - ID-AC Incidents

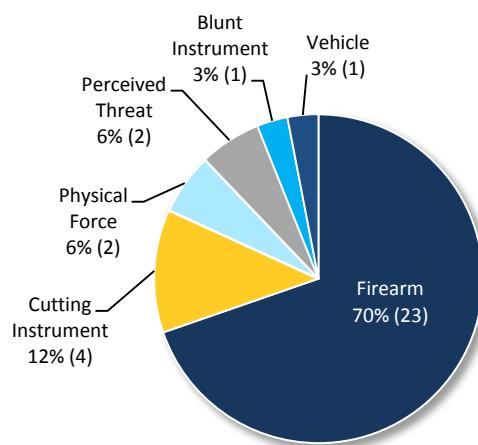


Figure 18

## Officer Restraint

Officers discharged a total of 306 rounds during ID-AC incidents in 2015, an increase of 34.8% from 2014 when 227 rounds were fired, but still 8% lower than the total of 331 recorded in 2012. The majority of officers fired five rounds or fewer (65%) during incidents of adversarial conflict. The most common number of rounds fired by an officer was two to five rounds (36%). Six officers fired more than 15 rounds, constituting 11% of the total numbers of officers involved in an ID-AC incident (see Figure 20).

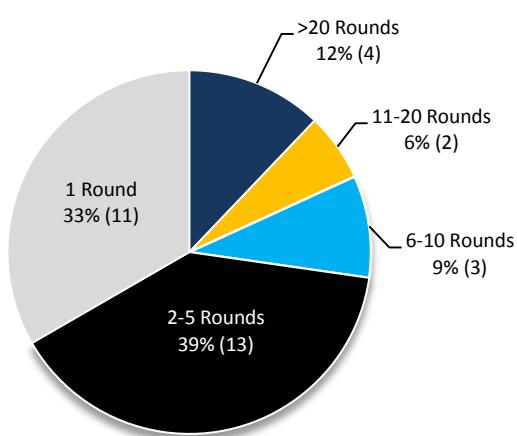
**Rounds Fired per ID-AC Incident**

Figure 19

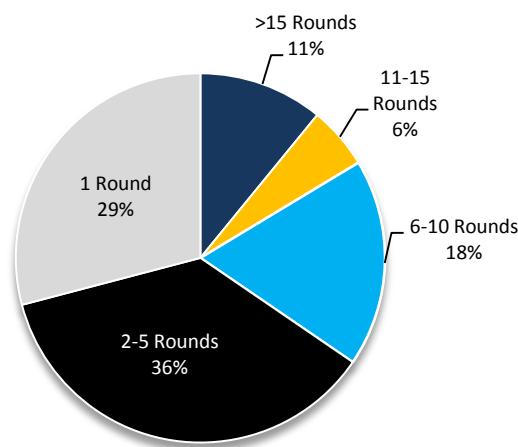
**Rounds Fired per ID-AC Officer**

Figure 20

Restraint is also apparent when analyzing the number of rounds discharged per ID-AC incident as opposed to per officer. The most common number of rounds fired during any incident was two to five (39%); combining this figure with the number incidents in which officers fired only one round, and approximately three-quarters of all ID-AC incidents involved the discharge of 5 rounds or less (see Figure 19). The most rounds fired during any one incident was 84. During this one exceptional incident, four officers assigned to the 83<sup>rd</sup> Precinct and two officers assigned to the 81<sup>st</sup> Precinct were involved in a protracted foot pursuit with a male perpetrator who recently assaulted a person with a firearm. During the pursuit, the perpetrator fired multiple rounds indiscriminately toward responding officers. After a prolonged engagement, officers were able to subdue the subject, with the subject sustaining a gunshot wound to his calf. One .45 caliber semi-automatic pistol was recovered from the scene.

## Objective Completion Rate

The Department does not consider hit percentages, in part because it is often unknown (e.g., in cases when a subject flees), and also because of the widely varying circumstances among incidents. Instead, the objective completion rate per incident is employed, as it is both more accurate and more instructive. Like combat itself, the objective completion rate per incident is pass/fail. When an officer properly and lawfully perceives a threat severe enough to require the use of his or her firearm, and fires at a specific threat, the most relevant measure is whether he or she ultimately stops the threat. This is the objective completion rate, and it is determined irrespective of the number of shots the officer fired at the subject. The objective completion rate is used for statistical purposes and is not a factor in individual investigations.

In 2015, officers hit at least one subject in 23 of the 33 ID-AC incidents, for an objective completion rate of 70%. The objective completion rate in 2014 was 63%. Because subjects in three incidents were not apprehended, the objective completion rate may be higher. In ten instances where officers were directly fired upon, officers hit at least one subject in six of those incidents, for an objective completion rate of 60%; three subjects were killed during these exchanges.

## Officer Firearms

In 2015, officers involved in ID-AC incidents discharged rounds from the following firearms: 21 were from Glocks, 16 were from Smith & Wessons, and 12 were from Sig Sauer 9mm's; five were from Colt M4's, and one was from a Heckler & Koch MP5. Department regulations allow officers to carry their on-duty service firearms while off-duty, and authorized off-duty firearms as secondary weapons while on-duty. No officer reported a firearms malfunction.

## Shooting Technique

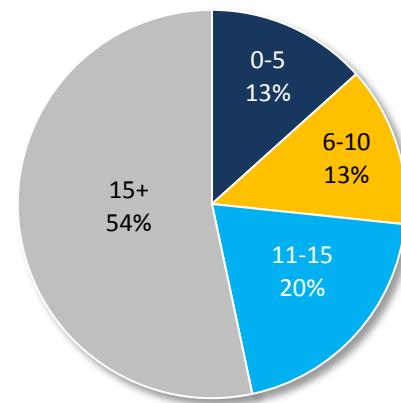
Utilizing a two-handed grip, standing, carefully lining up a target and using the firearm's sights is not always practical during adversarial conflict. Of the officers who reported how they held their firearms: 48% utilized a two-handed, supported position, while 12% reported a one-handed, unsupported position. With respect to officer stance, 87% of officers were in a standing position, 4% were in a seated position, and the position or posture of the remaining 9% of officers is undetermined.

Lack of cover can be a factor in the need for a firearms discharge, because a protected defensive position may allow officers to better control the pace of an incident. Eighteen officers reported that they were able to take cover during ID-AC incidents; during one incident in particular, seven officers assigned to the Emergency Service Unit took cover behind an armoured vehicle/rolling bunker. Overall, most of the officers involved utilized a vehicle, or part of a vehicle (i.e., door or door frame) as their primary form of ballistic protection.

Fifteen officers provided information about how far they were from their targets during ID-AC incidents. Although officers are trained to fire on a target from as far away as seventy-five feet, seven officers reported that they were 15 feet or fewer from the target at the time of the shooting (see Figure 21).

Information was provided with respect to lighting conditions in 11 separate incidents: 45% reported poor or dark lighting, including one incident that occurred in the rain, and 55% reported that there was ample lighting, either from sunlight or artificial lighting.

**ID-AC Distance to Target  
(in feet)**



*Figure 21*

## Officer Pedigree

Of the 55 officers who intentionally discharged their firearms during ID-AC incidents in 2015, 2 were female (4%) and 53 were male (96%); 17% of the Department's uniformed personnel are female and 83% are male.

Considering both current data and data from prior years, no discernible pattern emerges with regard to the likelihood that an officer of any particular race will become involved in an ID-AC incident (See Figure 22). Historically, members of the service in the rank of police officer with fewer years of aggregate service are significantly more likely to be involved in ID-AC incidents when compared with those officers of longer tenure, or officers of higher rank. Officers in the rank of police officer were involved in 56% of ID-AC incidents in 2015, although they accounted for 65% of the Department's total uniformed staffing. Officers in the rank of detective were involved in 29% of ID-AC incidents, though they comprise 14% of the Department's total uniformed staffing. Fifty percent of the detectives involved in ID-AC incidents were assigned to the Emergency Service Unit (ESU) and, as such, are regularly requested to respond to incidents that involve armed subjects. In one incident, six detectives assigned to ESU discharged their firearms at a subject armed with an assault rifle who had been firing the assault rifle at the officers. Officers with ten years of service or less were involved in 52% of ID-AC incidents, although they accounted for 55% of the Department's total uniformed staffing. Typically, officers with fewer years of aggregate service have a greater likelihood of becoming embroiled in ID-AC incidents (see Figures 23 & 24)

## Race, ID-AC Officers vs. Department Staffing

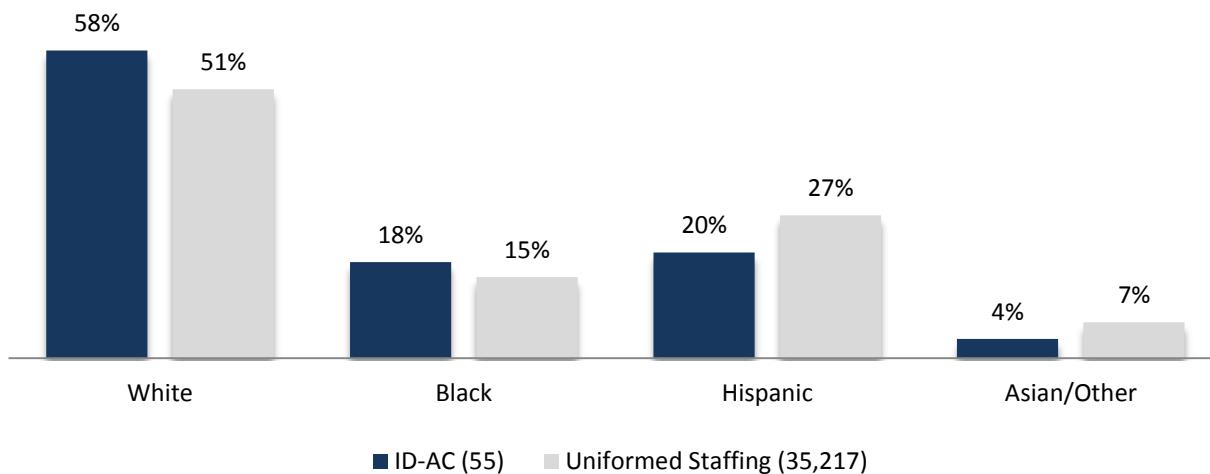


Figure 22

## Years of Service, ID-AC Officers vs. Department Staffing

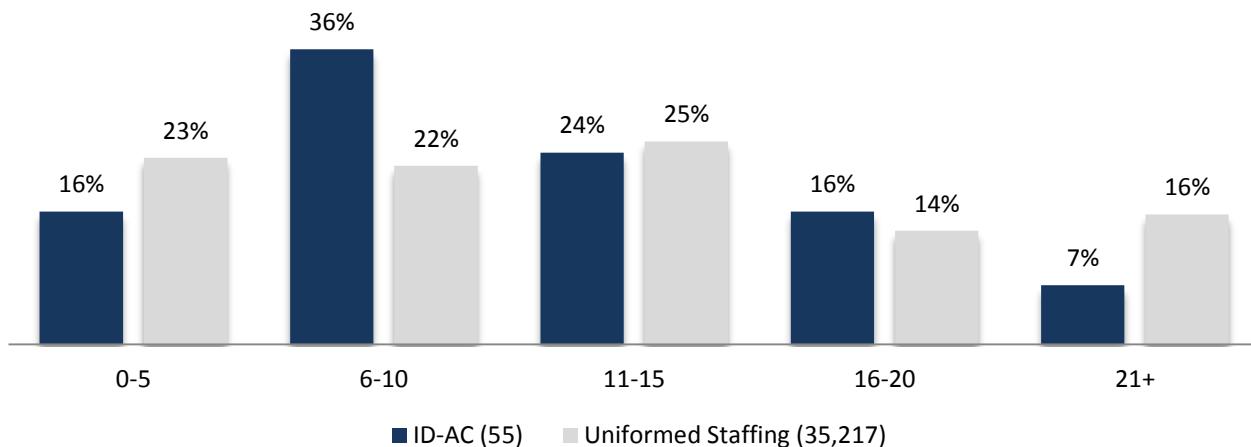


Figure 23

## Rank, ID-AC Officers vs. Department Staffing

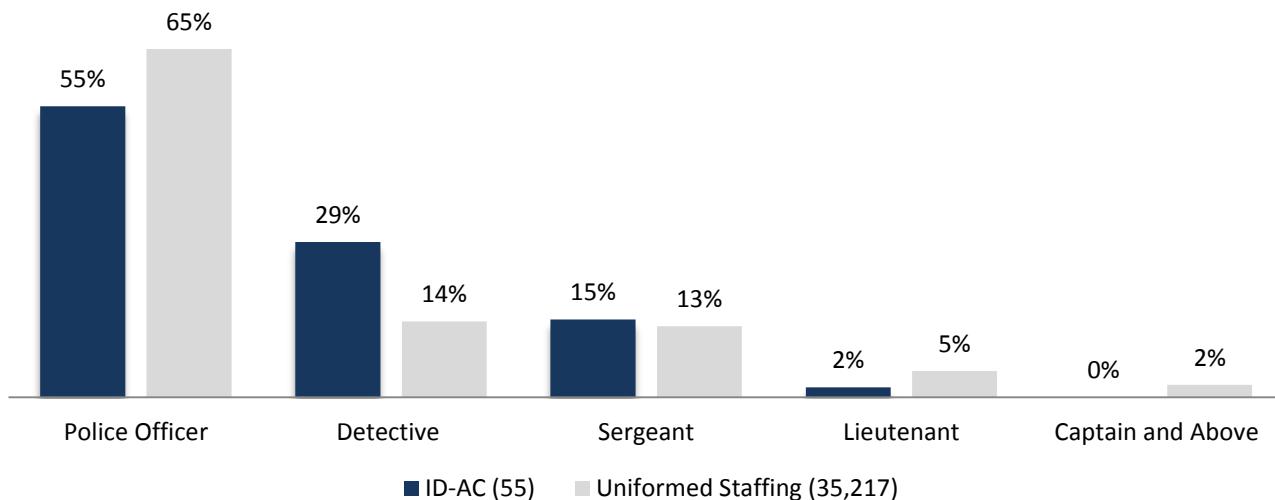


Figure 24

## Subject Pedigree

There were a total of 47 perpetrators involved in ID-AC incidents in 2015, all of whom were male. Forty-two of the 47 subjects were apprehended, while five remain un-apprehended, four of whom are known only by sex and race.

Known subject ages ranged from 16 to 58 years-of-age, with a median age of 27. Approximately 70% of involved subjects were 30 years-of-age or younger.

The race of a criminal suspect is determined by eyewitness reports, usually that of the victim(s). The race of a subject is determined by a subject's self-identification, existing government-issued documentation, racial/ethnic physical characteristics, medical examiner reports, or other factors.

The race of subjects involved in ID-AC incidents corresponds to the race of subjects involved in criminal shootings (see Figure 25). Similarly, victims of criminal shootings tend to come from the same communities as the suspects. Among criminal-shooting victims identified by race in New York City in 2015, 73% were black, 13% were Hispanic, 9% were white, and 4% were Asian or other.

### Criminal Shooting Suspects vs. ID-AC Subjects, by Race

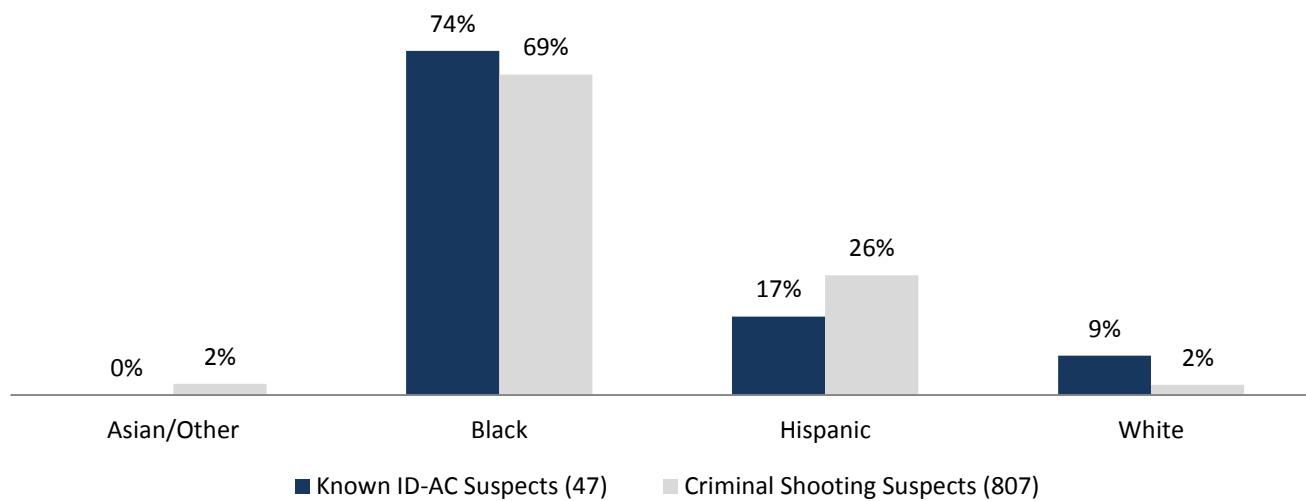


Figure 25

### Prior Arrests

Generally, a subject's arrest history is unknown to the officer at the onset of an incident. Nevertheless, arrest history is pertinent because it is indicative of a subject's propensity for criminal conduct and capacity for violence when confronting a police officer. It can evince itself in a subject's bearing, actions, and reactions. An arrest history, pending charges, or parole/probation status may also make a subject more willing to confront a police officer in an attempt to avoid arrest.

All but one apprehended subject involved in ID-AC incidents had a known criminal history. Four subjects still remain unidentified at the time of this report. Of the 41 subjects with a known criminal history, 36 had multiple prior arrests, ranging from two to 23 arrests. These arrests were for numerous offenses, including attempted murder, robbery, assault, and criminal possession of a weapon. The distribution of prior arrests across known subjects remains relatively symmetric—with the mean, median, and modal number of prior arrests nearing 10. Although the status of a criminal offender remains unknown during adversarial engagements, it is certainly predictive of an offender's involvement in violent altercations with law enforcement.

## Officer Deaths

One officer was killed during an ID-AC incident in 2015. The plainclothes officer was fatally shot while responding to a shooting incident that occurred within the confines of Police Service Area 5. After the officer confronted the fleeing perpetrator in the nearby 25<sup>th</sup> Precinct, the perpetrator fired one round in the officer's direction, striking him in the head. His partner at the time exchanged gunfire with the perpetrator.

One additional officer was shot and killed in 2015; however, the officers involved did not discharge their weapons during the incident so data with respect to this incident is not included within this report. The plainclothes police officer was killed in the confines of the 105<sup>th</sup> Precinct while on routine patrol. While seated in their unmarked vehicle, both the deceased officer and his partner confronted a person believed to be concealing a firearm in his waistband. The perpetrator brandished a loaded firearm from his waist and discharged multiple rounds into the officers' vehicle. One of the officers was fatally wounded during this assault and succumbed to his injuries two days later.

## Officer Injuries

Five officers were injured in the course of ID-AC incidents. Three were struck by a subject's bullets, one of whom was able to return fire causing the subject to flee. One officer sustained abrasions to her shoulder and back as a result of an assault with a hammer, and one officer sustained wounds to his shoulder from a knife assault.

## Bullet-Resistant Vests

Out of 52 on-duty officers who were involved in ID-AC incidents in 2015, 47 were wearing bullet-resistant vests. Three off-duty officers involved in an ID-AC incident were not wearing their vests during the conflict. One off-duty officer was injured by a subject's firearm. No officers were struck in the torso by a subject's weapon, and as such, no case of an officer being saved by their vest was recorded in ID-AC incidents in 2015.

## Subject Deaths

Of the 47 known subjects involved in ID-AC incidents in 2015, eight were killed by police gunfire. This figure has remained constant since 2013, but down 50% from 2012 when 16 subjects were shot and killed by police officers. The number of subjects shot and killed between 2013 and 2015 inclusive, represents the lowest figures recorded since the Department began collecting in-depth statistics in 1971. All eight subjects that were killed by police gunfire during an ID-AC incident had prior arrest histories, and, of the seven toxicology reports available at time of this report, four showed the presence of drugs or alcohol.

Officer's perceived the presence of a dangerous weapon in six of the eight incidents. Four were actual firearms capable of discharging live rounds, and one was a pellet gun. In one incident the perpetrator was killed after he assaulted the officer with a knife. Of the remaining two incidents in which no weapons were

recovered at the scene, the officers discharged their weapons while they were attempting to restrain the perpetrators; during one incident in particular the perpetrator was attempting to remove the officer's firearm from his holster. Narratives describing the eight ID-AC incidents in which subjects were killed can be found in Appendix D.

## **Subject Injuries**

Fifteen subjects were shot and injured by police gunfire in 2015, all of whom had prior arrests. Eight were armed with firearms, two were armed with imitation pistols, two were armed with knives, one was armed with a hammer, and one was reaching for a knife.

## **Bystander Deaths and Injuries**

One bystander was killed by police gunfire in 2015. An undercover officer assigned to the Firearms Investigation Unit (FIU) was engaged in an ongoing investigating into the sale of illegal firearms. The undercover officer became the victim of a robbery, by a person known to this Department, while attempting to engage in a firearms transaction. During the confrontation, the officer was fired upon by the suspect. One bystander was fatally wounded as the officer returned gunfire. During the follow-up investigation, an imitation pistol (BB gun) was recovered at the scene.

In two other incidents, bystanders suffered non-fatal injuries. During an exchange of gunfire between officers and an armed perpetrator, one discharged round went through the windshield of a vehicle; shards of glass resulted in a civilian eyewitness suffering a laceration to her eye. In another incident, the perpetrator held a civilian at gunpoint before turning the weapon on responding officers; the civilian suffered a non-fatal gunshot wound to her left shoulder. At the time of this report, it is unclear whether the civilian's injuries were caused by discharged rounds belonging to the responding officers' or perpetrator.

## **Discipline**

Even when intentional firearms discharges are deemed justifiable in a court of law, they are still reviewed by the Department for tactical errors and violations of procedure. Discipline in these cases does not always relate to the actual discharge of the firearm, but can result from a violation of other Department procedures. Additionally, all officers who discharge their firearms are sent to a firearms retraining course, regardless of the circumstances of the discharge.

Of the seven investigations that have been completed at the time of this report, six were determined to have been in compliance with Department procedures and the law, and one was found to be in violation of Department guidelines.

## Summary

There were 33 ID-AC incidents in 2015, involving 55 officers who discharged their firearms. These conflicts involved 42 known subjects and five unknown and/or un-apprehended subjects. In ten separate ID-AC incidents at least 11 subjects fired directly at officers.

In 2015, there were 1,138 victims of criminal shootings in New York City. The number of intentional firearm discharges by police, comparatively, is very small, but every time an officer discharges a firearm he or she risks inflicting injury or death on subjects, fellow police officers, or innocent bystanders. And in 2015, two bystanders were injured and one was killed by police gunfire. Because of this, the Department ensures that each incident is thoroughly investigated and analyzed in order to reduce these events, thereby reducing the likelihood of harm to civilians and officers alike.

There were, on average, 35,217 uniformed officers employed by the NYPD in 2015. Of them, 55 (0.16%) intentionally discharged a firearm at a subject.

Other instructive metrics involve comparing the number of ID-AC incidents to the number of high risk radio runs, or to the number of arrests of armed suspects made by officers each year. Over the course of 2015, officers responded to more than 4.5 million calls for service, of which more than 66,000 involved weapons. Of the thousands of weapons arrests that resulted from these encounters, 4,924 were gun-related. Officers also had millions of additional interactions with the public, including reasonable suspicion encounters, car stops, and violation stops, and further, escorted thousands of emotionally disturbed persons to hospitals and care facilities. In the overwhelming majority of incidents in which officers took an armed subject or an emotionally disturbed person into custody, they did not fire their weapons.

## Part III: Intentional Discharge – Animal Attack

## Overview

Department policy requires officers who intentionally discharge their firearms during animal attacks to do so only to defend themselves or others from the threat of physical injury, serious physical injury, or death, and to use their firearm only as a last resort to stop an animal attack. Officers are equipped with non-lethal tools that can be used to cope with animal attacks, including batons and OC spray, but these options are not always feasible or effective.

However, in the latter half of 2015, executive approval was obtained for the Firearms and Tactics Section to purchase 20,200 canisters of OC/Pepper Spray with increased potency. The new formulation contains a significantly higher concentration of Major Capsaicinoids. With this upgrade, NYPD service members are equipped with a more effective, less lethal option. Currently, canisters with the new formula are being issued to members of the service performing patrol duties within the Patrol, Transit, and Housing Bureaus. The remainder of the Department will be issued their new OC sprays at a later date.

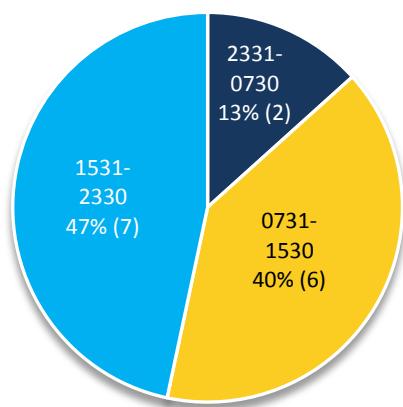
Emergency Service Unit personnel carry restraining devices to keep animals at a safe distance, as well as CO<sub>2</sub> pistols and rifles capable of firing tranquilizer darts containing Ketaset, a veterinary anesthetic, and Animal Care and Control is also available to assist officers in capturing dangerous dogs or other animals. In rapidly evolving situations, however, when officers may not have prior knowledge that a dog is present, these options are not always prudent or possible.

There were 15 intentional firearms discharges during an animal attack (ID-AA) in 2015, representing an 11.1% decrease from 2014. Thirteen of the 15 were on-duty incidents; the remaining two involved off-duty members. A total of 15 officers discharged their firearms.

Eighteen animals—all of them dogs—were involved in 15 separate incidents; sixteen of the dogs were Pit Bulls, one was a German Shepherd, and one was a Rottweiler; two Pit Bulls were involved in three separate incidents, accounting for any disparity between the total number of incidents and the number of animals. Of the 18 dogs involved, four were killed and an additional eight were injured. Two officers and three civilians were bitten during these exchanges. One officer was shot and four civilians were struck by fragments and debris.

These numbers do not encompass all dog attacks on officers or civilians; only incidents involving intentional firearms discharges by police officers are included. In 2015, police officers responded to thousands of calls for service involving dogs and other animals, and they encountered many more while on patrol, executing search warrants, or investigating complaints—incidents that were not processed through 9-1-1 or 3-1-1.

## ID-AA Incidents by Tour



*Figure 26*

## Dates and Times of Discharges

ID-AA incidents were scattered throughout the year in 2015. April recorded the most incidents (three total), with the months of May, June, and September recording zero (see Appendix G).

Twelve of the 15 ID-AA incidents occurred on Wednesday, Thursday, and Saturday (four incidents each). The remaining three occurred on Monday, Tuesday, and Friday (one incident each); there were no incidents on Sunday. Seven of the 15 or 47% of total incidents occurred during the third platoon, between 1531 in the afternoon and 2330 at night (see Figure 26).

## ID / AA Incidents

### Legend

- Animal Attack Incidents (14) within NYC
- Precinct Boundary

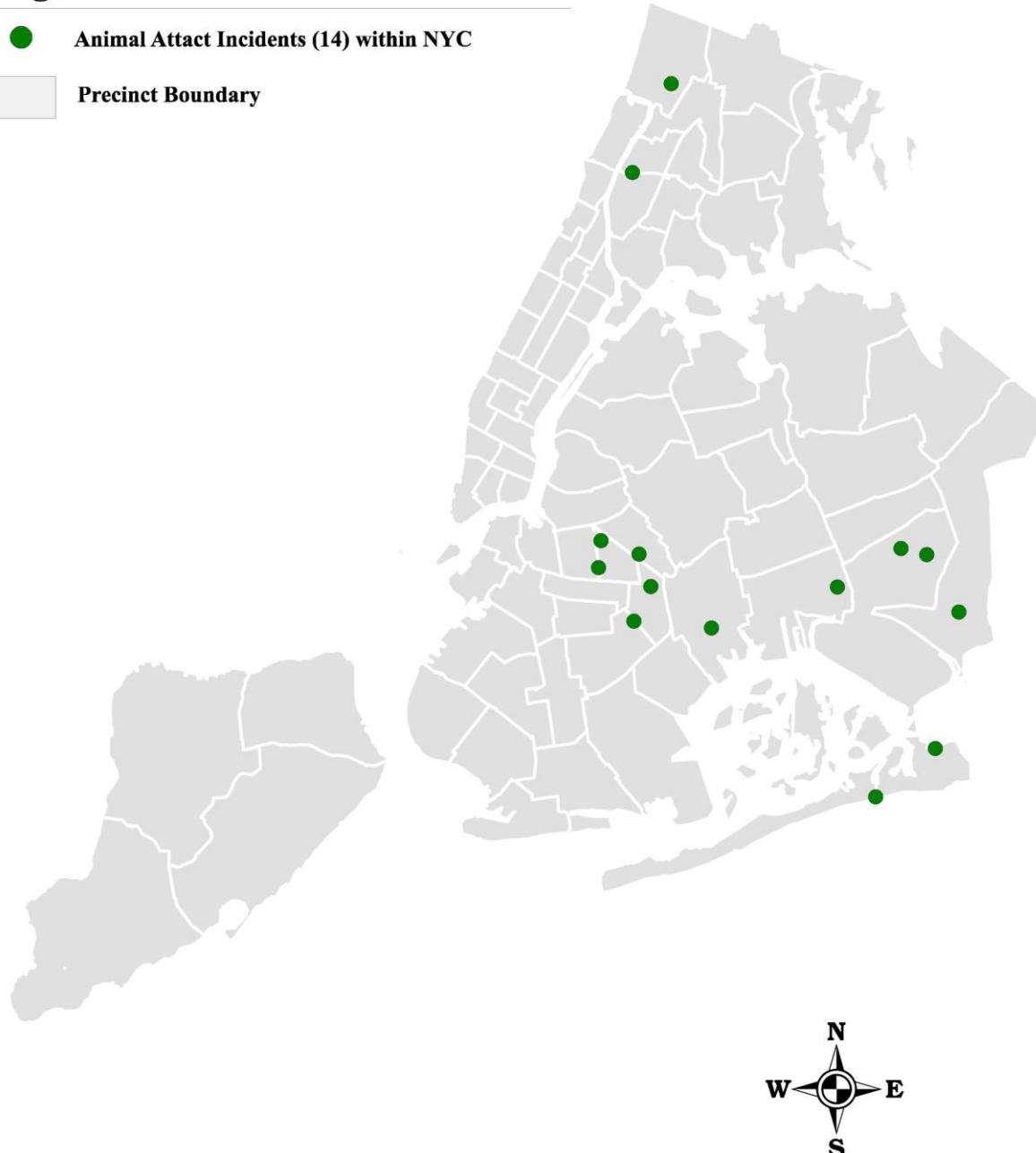


Figure 27

## Locations of Discharges

Of the 15 total ID-AA incidents in 2015, 14 occurred within New York City, and one in Nassau County. Of the 14 within-City incidents, 13 occurred within the jurisdiction of the Patrol Services Bureau, and the remaining was on Housing Development grounds (Eleanor Roosevelt II Houses). No incidents took place within the Metropolitan Transportation Authority (MTA) transit system. Brooklyn and Queens accounted for 80% of ID-AA incidents in 2015, with a total of six incidents each (see Figures 27 and 28). ID-AA incidents occurred in 13 separate precincts; the 113<sup>th</sup> precinct was the only command to have two separate incidents in 2015. Nine ID-AA incidents occurred in outdoor settings (i.e., on sidewalks and streets), and the remaining six occurred in indoor, residential locations (see Figure 29).

### ID-AA Incidents by Location

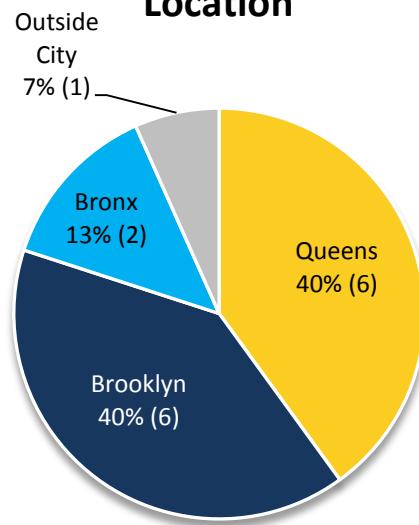


Figure 28

### ID-AA Incidents by Location Type



Figure 29

## Reasons Officer Involved

Officers became involved in ID-AA incidents for a variety of reasons. Thirteen officers were on-duty at the time of the incident. Overall, uniformed patrol assignments were more likely to be involved in ID-AA incidents in 2015. Of the on-duty members involved: 11 were assigned to uniformed patrol and one was assigned to Operation Impact (within the Patrol Services Bureau and the Housing Bureau). One officer was assigned to the Narcotics Division (see Figure 30).

## On-Duty Officer Assignment, ID-AA Incidents



Figure 30

The most common reasons precipitating ID-AA incidents were pick-up assignments involving a dog attack, calls for service involving a suspicious/vicious dog, and calls for service involving assaults. Sixty percent of these encounters were precipitated by 9-1-1 requests made by private citizens; the remaining resulted from independent observations and/or investigations conducted by NYPD service members (see Figure 31).

## Situations Precipitating ID-AA Incidents

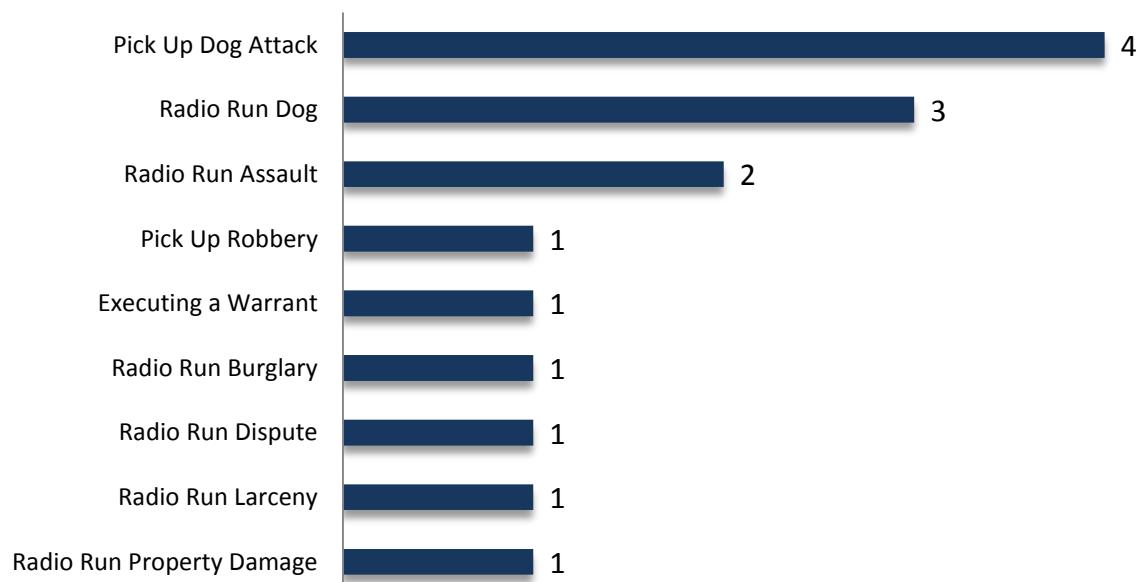


Figure 31

## Officer Restraint

A total of 26 rounds were fired by officers during ID-AA incidents in 2015, a decrease of 41% from 2014, when 44 rounds were fired. In fourteen of the 15 ID-AA incidents, officers fired 5 rounds or less; nine

incidents involved the discharge of only one round. Only one officer fired more than five times, and none were required to reload their firearm during an incident (see Figure 32).

Restraint is also apparent when analyzing the number of shots fired per ID-AA incident. In 60% of incidents, only one round in total was fired. The most rounds fired during any incident were six (see Figure 33).

### Rounds fired per ID-AA Officer

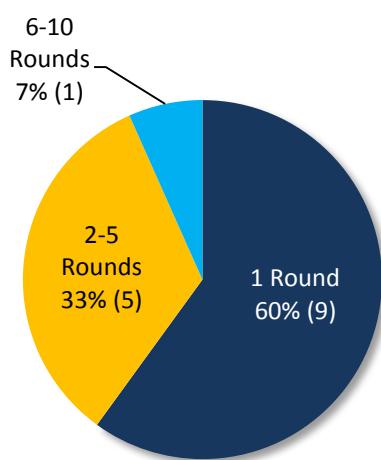


Figure 32

### Objective Completion Rate

In 2015, officers struck 12 animals in 15 discrete ID-AA incidents, for an objective completion rate of 80%. This is significantly higher than the objective completion rate for ID-AC incidents. A likely explanation for this higher rate of completion is that, where listed, officers involved in ID-AA incidents were predominantly between one and five feet from the animal when they fired.

### Firearms

All 15 officers who fired their weapons during ID-AA incidents in 2015 utilized 9mm firearms—11 were Glocks (ten ‘Model 19’ and one ‘Model 26’) and four were Smith & Wessons (one off-duty 9mm was used by an off-duty member). No officers reported malfunctions during animal attack incidents.

### Shooting Techniques

Utilizing a two-handed grip, standing, and lining up a target using the firearm’s sights is the preferred method of discharging a firearm, but the fast-paced nature of dog attacks often renders these tactical maneuvers impracticable during the course of duty. Nine of the 15 officers who discharged their firearm during an animal attack incident reported their grip. Eighty-nine percent utilized a two-handed grip, while the remaining 11% reported that they held their firearm with a one-handed, unsupported grip.

### Rounds fired per ID-AA Incident

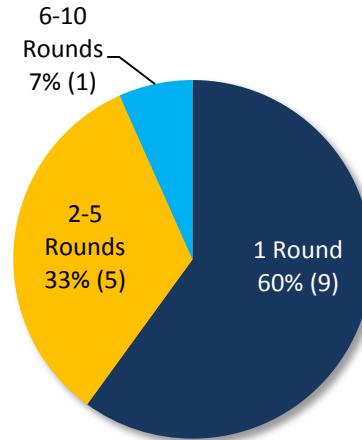


Figure 33

Seven officers discharged their firearms when the dogs were seven feet away or closer; an additional five officers discharged their weapons when the dog was between eight to fifteen feet away. The officers that discharged their firearms were unable to take cover during the animal attack.

Eight officers reported on light conditions. Four incidents occurred during daylight hours; in the other four incidents, officers reported adequate, artificial lighting.

## Officer Pedigree

Of the 15 officers who intentionally discharged their firearms during ID-AA incidents in 2015, three were female (20%) and 12 were male (80%). These figures are relatively consistent with the Department's gender demographics; approximately 17% of the Department's uniformed personnel are female and 83% are male.

Although the percentages of White and Hispanic officers involved in ID-AA incidents are, to varying extents, at odds with their representation within the Department, the sample size of officers involved in ID-AA discharges is only 15, just a small fraction of the Department's total uniformed personnel. These figures are therefore not useful in determining the likelihood that an officer of any particular race will become involved in an ID-AA firearms discharge (see Figure 34). There is a greater likelihood that officers in the ranks of police officer or detective and those with fewer years of service will become involved in ID-AA incidents. These officers are more likely to be assigned to respond to 9-1-1 calls involving animal attacks. In addition, these members conduct vertical patrols, effect arrests, and engage in myriad other assignments that significantly increase the likelihood of becoming involved in an ID-AA incident (see Figures 35 and 36).

### Race, ID-AA Officers vs. Department Staffing

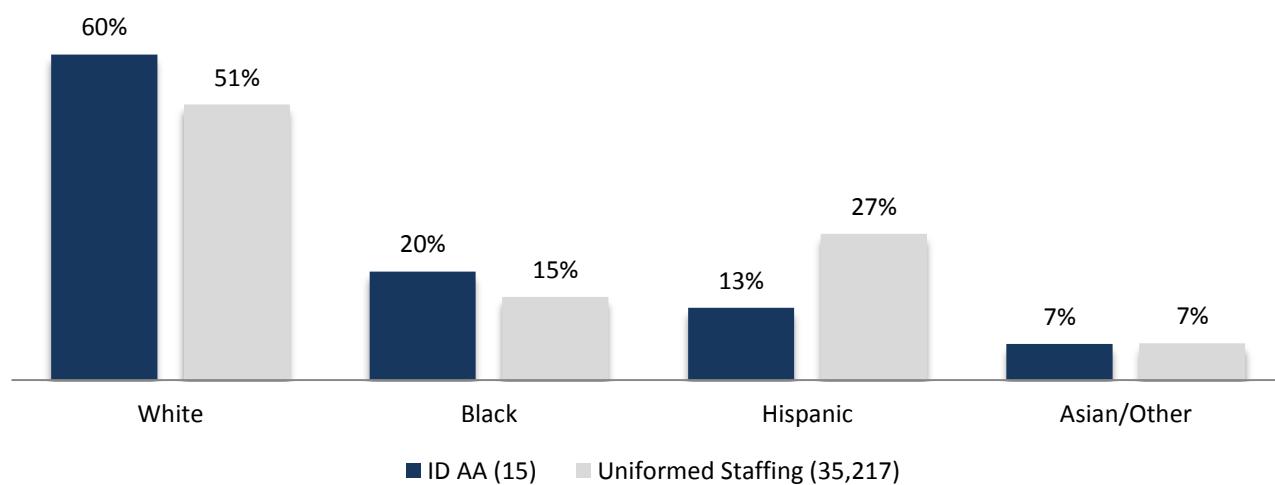


Figure 34

## Years of Service, ID-AA Officers vs. Department Staffing

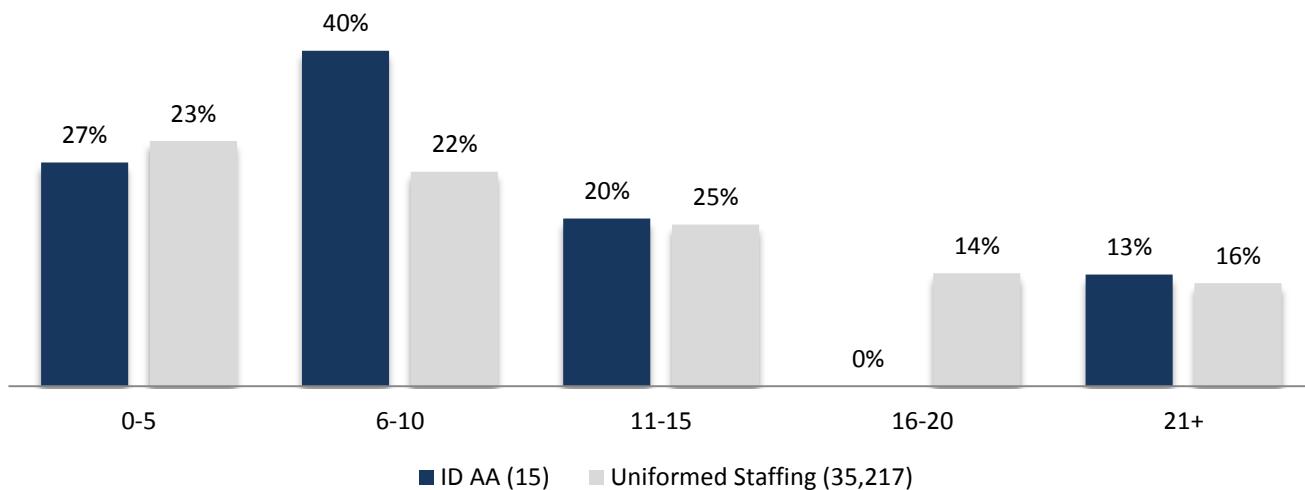


Figure 35

## Rank, ID-AA Officers vs. Department Staffing

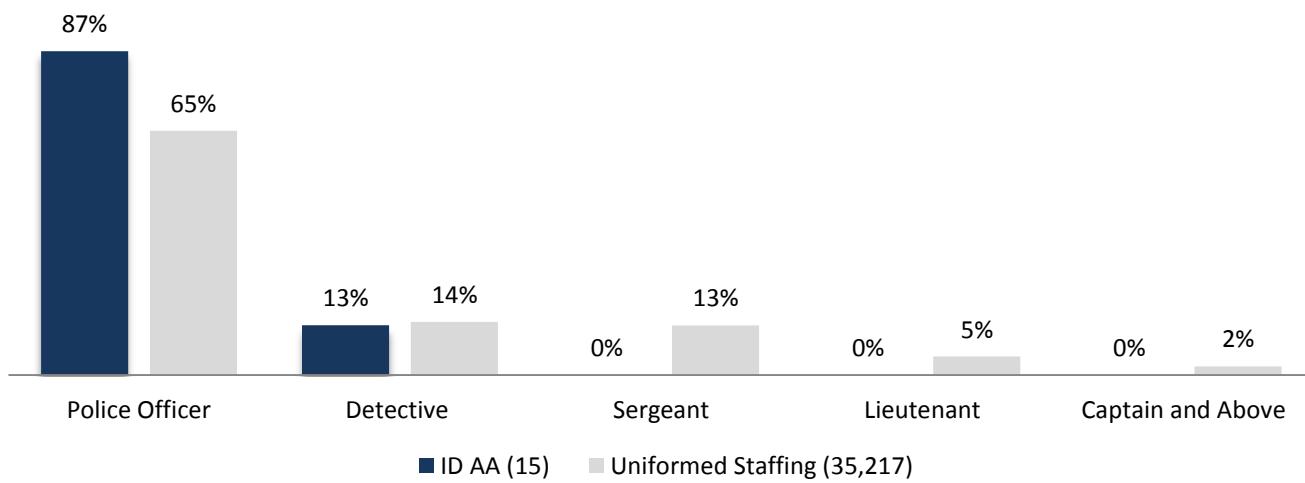


Figure 36

## Incident Outcomes

Of the six investigations that have been completed at the time of this report, all were determined to have been in compliance with Department firearms guidelines. Although no corrective action was instituted, re-training was recommended for five of the officers involved. Nine cases are pending.

## Part IV: Unintentional Discharge

## Overview

There were 15 incidents of unintentional firearms discharges in 2015, a 16.7% decrease from 2014, when there were 18 recorded. All 15 incidents involved a single officer, and all resulted in a single discharge.

Three incidents resulted in injuries to three separate officers: one to the right thigh and shin, one to the left thigh, and one sustained a laceration above the right eye when the round struck the ground causing concrete to fracture.

Five unintentional discharges occurred while the officer was off-duty, and 10 occurred on-duty. Two incidents occurred outside (one in a hospital parking lot and one in a marked RMP), and 14 occurred inside (eight occurred inside Department facilities, five inside officers' residences, and one inside a church gymnasium).

## Non-Adversarial Unintentional Discharges

Non-adversarial unintentional discharges occur when an officer is loading or unloading, holstering or unholstering, cleaning, or otherwise handling a firearm. In 2015, 14 of the 15 total unintentional discharges were non-adversarial, and therefore fall into this category.

### Loading/Unloading

There was one unintentional discharge in 2015 that involved an officer attempting to unload his service weapon, causing a minor injury to his left thigh.

### Handling

Thirteen non-adversarial unintentional discharges resulted from handling a firearm that was unrelated to loading or unloading a firearm, resulting in injury to two officers. In one incident, an officer accidentally discharged a round from an AR-15 rifle while attempting to voucher the firearm. In the second incident where injury occurred, the officer was seated in his personal vehicle when a round was discharged from his weapon.

Four of the unintentional discharge incidents were related to holstering/unholstering; no injuries resulted from these discharges. One officer was on duty and was attempting to holster her service weapon while sitting in a radio motor patrol (RMP) car. The other three incidents occurred while the officers were on duty in Department facilities and were attempting to holster their authorized weapons.

Three of these incidents transpired during firearm cleaning and one occurred while the officer was handling a newly purchased firearm; none resulted in any injury to MOS.

## Adversarial Unintentional Discharges

Unintentional discharges during adversarial conflict or animal attack occur during the course of lawful police conduct and are brought about either wholly, or in part, by aggravating factors, such as a suspect grabbing an officer's firearm, an officer losing his or her balance, or when an officer's shooting hand is struck by an object. One such discharge occurred while officers were conducting a search for a burglary suspect in a dimly lit church gym. An officer tripped on a commercial floor mat, causing the officer to discharge his firearm.

## Firearms

Of the 15 firearms that were unintentionally discharged in 2015, eight were the officer's service weapons, six were authorized off-duty firearms, and one was a suspect's recovered firearm. Seven of the firearms were Glocks, five were Smith and Wessons, two were Sig Sauers, and one was an AR-15 style rifle.

## Officer Pedigree

Of the 15 officers who unintentionally discharged firearms in 2015, 13 were male (87%) and two were female (13%). These figures are relatively consistent with the Department's gender demographics: approximately 83% of the Department's uniformed personnel are male and 17% are female.

Although the percentages of Black and Hispanic officers involved in unintentional discharges are, to varying extents, at odds with their representation within the Department, the sample size of officers involved in unintentional discharges is only 15, just a small fraction of the Department's total uniformed personnel. These figures are therefore not useful in determining the likelihood that an officer of any particular race will become involved in an unintentional firearms discharge (see Figure 37).

### Race, Unintentional Discharges vs. Department Staffing

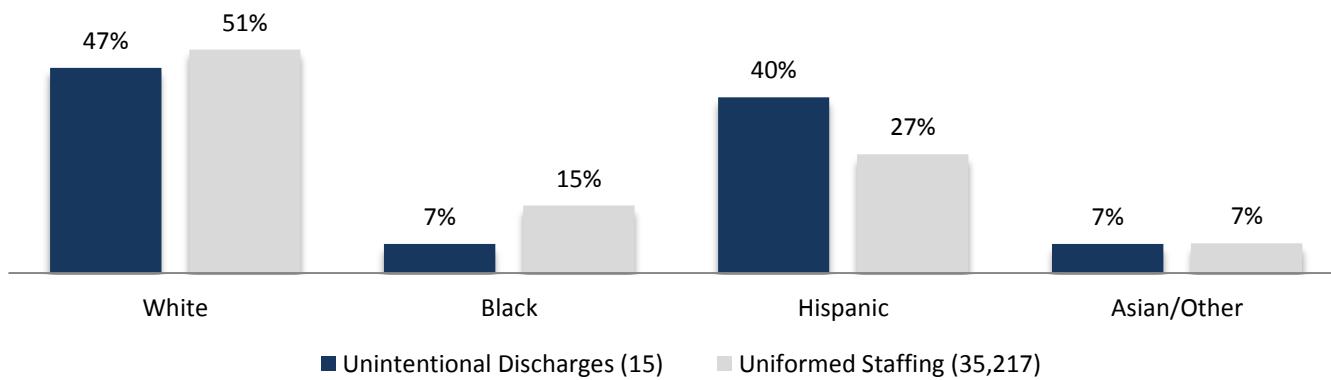


Figure 37

Officers with fewer years of service were more likely to be involved in unintentional firearms discharges. Of the officers with five years of service or fewer, three had performed three years of aggregate service and two had accumulated five. Six officers had performed between six to ten years of aggregate service (see Figure 38). Of the officers involved, nine were police officers, four were detectives, and two were sergeants (see Figure 39).

### Years of Service, Unintentional Discharges vs. Department Staffing

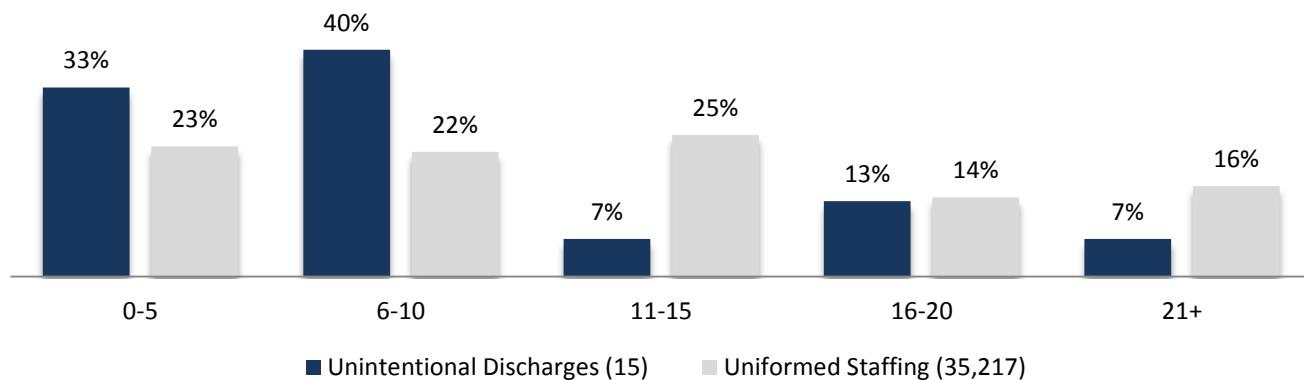


Figure 38

### Rank, Unintentional Discharges vs. Department Staffing

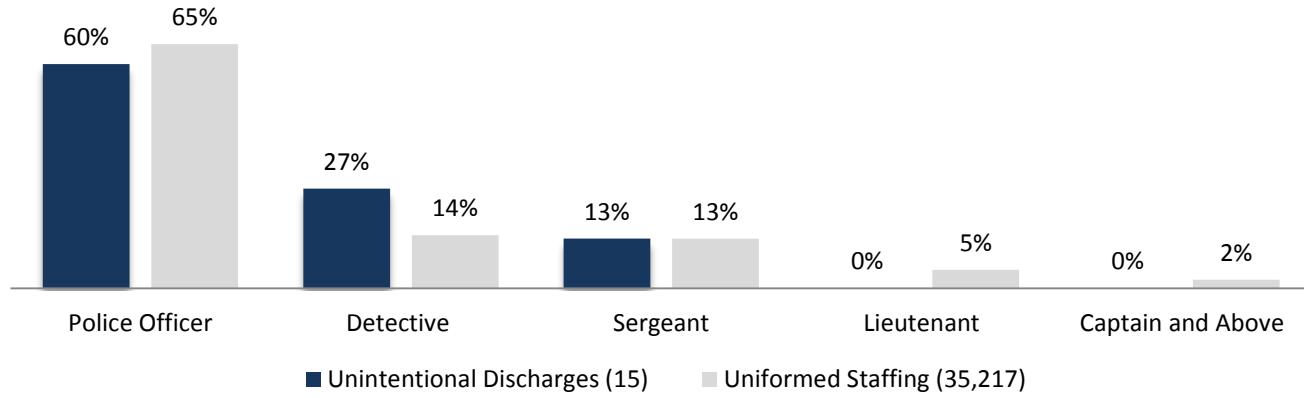


Figure 39

## Incident Outcomes

The Department investigates all unintentional firearms discharges thoroughly. One officer was placed on modified assignment and a supervisor was suspended when one unintentional discharge occurred. The investigations that have been completed at the time of this report found that officers were in violation of Department guidelines in eleven cases. The recommended discipline for involved officers ranged from a Schedule 'B' Command Discipline to *Charges and Specifications*. Retraining on relevant tactics was recommended in four cases.

## Part V: Unauthorized Use of a Firearm

## Overview

There were four firearms discharges in 2015 that were classified as unauthorized use of firearm, a 50% decrease from 2014, when eight unauthorized incidents were recorded. Two incidents involved officer suicides, one involved a domestic dispute, and the remaining involved an accidental discharge by a person who mishandled an officer's firearm. During the off-duty domestic incident, the member reportedly fired one round from his off-duty service weapon at a victim known to the Department. The member was summarily arrested by the Yonkers Police Department and placed on suspension.

## Officer Pedigree

Of the three officers who were involved in unauthorized firearms discharges in 2015, all were male; the two officer suicides involved White officers and the domestic incident involved a Hispanic officer. One member had twelve years of service, one had 16, and the remaining had over 20 years. One officer held the rank of police officer, and two were sergeants. An additional police officer with 17 years of service, permitted a civilian to hold his off duty .38 caliber revolver, and the civilian accidentally discharged a round, striking another civilian.

Unauthorized firearms discharges are a relatively infrequent occurrence, and yield no discernible or generalizable trend over time. Moreover, due to the diminutive sample that was captured in 2015—representing a small fraction of the Department's total uniformed staffing—these statistics are insufficient in determining the likelihood that an officer of any particular demographic will become involved in an unauthorized firearm discharge.

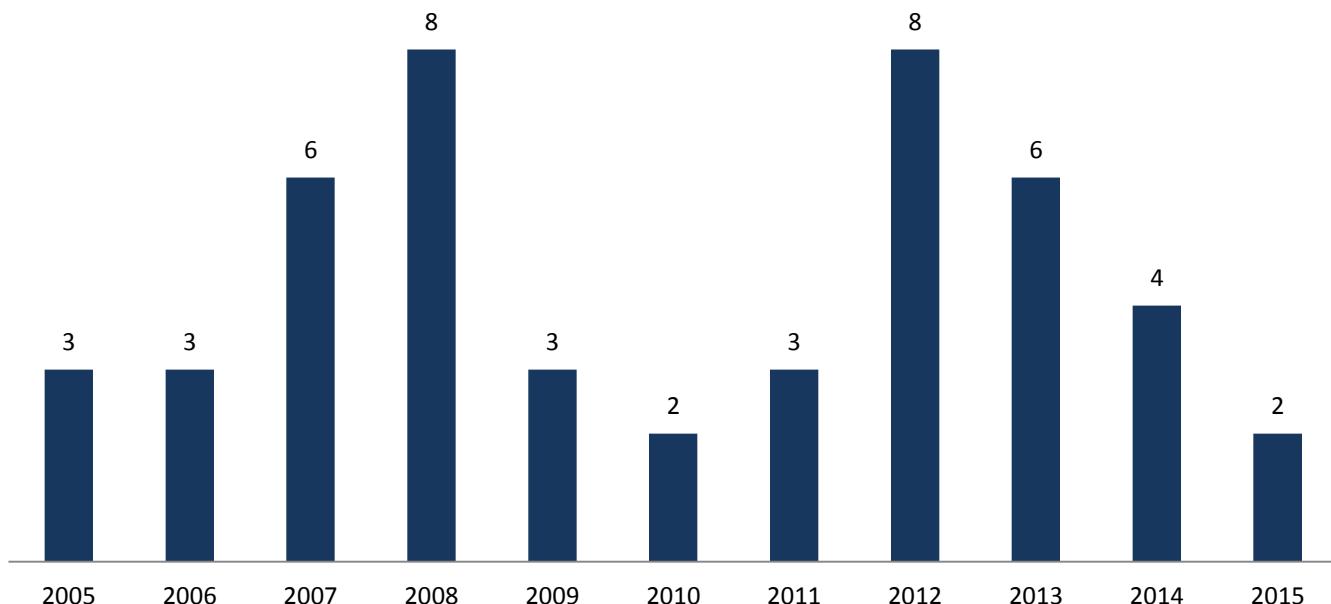
## Suicide

Two police officers committed suicide by firearm in 2015; both members were off-duty at the time of the suicide (see Figure 40\*).

The Department and a number of external organizations provide mental health resources specifically targeted to uniformed members of the service who may be at risk for suicide. Department resources include the Employee Assistance Unit, the Counseling Services Unit, the Chaplain's Unit, the NYPD Helpline, and the Psychological Evaluation Unit. External resources include Police Officers Providing Peer Assistance (POPPA), the Police Self Support Group, and Columbia Cares (COPE). The Department actively promotes these resources to all uniformed police members of the service.

*\*Because of the focus of this report Figure 40 depicts officer suicides by firearm only. Suicides or attempted suicides by other methods were not included.*

## Police Officer Suicides by Firearm, 2005-2015



*Figure 40*

## Discharges by Other than an Officer

There was one incident of a firearms discharge by other than an officer in 2015. One off-duty police officer permitted a friend to handle a loaded revolver and she accidentally fired one round, striking her husband in the leg.

## Incident Outcomes

The Department investigates all incidents of unauthorized use of a firearm thoroughly. In the rare case of an unauthorized discharge other than suicide, the disciplinary process will be initiated against the officer discharging the weapon, and/or the officer charged with the security of the weapon. In cases of serious misconduct, officers are arrested, suspended, and eventually terminated for their actions.

Two officers had been disciplined pending the results of the investigations, one was placed on modified assignment and the second was suspended.

## Part VI: Mistaken Identity

## Overview

The Department defines an incident of mistaken identity as one in which a New York City police officer fires on any law-enforcement agent in the mistaken belief that the subject officer is a criminal and poses an imminent physical threat. Mistaken identity incidents are distinguished from crossfire incidents in that the shooting officer is intentionally firing on the targeted officer. Unintentional crossfire incidents and accidental discharges resulting in injury or death to fellow officers are not included in this category. An unauthorized discharge, in which an officer injures or kills another officer in a criminal manner (e.g., domestic incident), is also excluded. This definition comports with the 2010 New York State Task Force on Police-on-Police Shootings' definition of "Police-on-Police Confrontations."

## 2015 Incidents

In 2015 there were no incidents of mistaken identity.

## Appendices

## Appendix A – Tribute

### DETECTIVE FIRST GRADE BRIAN MOORE

*105<sup>th</sup> Precinct*



On May 2, 2015, Police Officer Brian Moore, assigned to the Anti-Crime Unit within the 105<sup>th</sup> Precinct observed a suspicious male walking in the street. Police Officer Moore and his partner were seated inside their vehicle when they approached the perpetrator from behind based on their belief he was carrying a firearm in his waistband. The perpetrator pulled a firearm from his waist and discharged multiple rounds into the vehicle that Police Officer Moore was seated. Police Officer Moore was struck and removed to Jamaica Hospital due to his injuries. Two days later, on May 4, 2015, Police Officer Moore succumbed to his injuries. The perpetrator was arrested a short time later and charged with first degree Murder.

Police Officer Moore was sworn in as a New York City police officer in January 2010, and served 5 years in the Police Department. Police Officer Moore lived with his parents in Massapequa, New York.

Police Officer Moore is survived by his parents: Raymond, Irene and his sister Christine. Police Officer Moore completed over 90 college credits, working towards a degree in Chemical Engineering. Police Officer Moore was laid to rest at St. Charles Cemetery in Farmingdale, New York. Police Commissioner William J. Bratton posthumously promoted Police Officer Brian Moore to Detective First Grade.

### DETECTIVE FIRST GRADE RANDOLPH HOLDER

*Police Service Area 5*



On October 20, 2015, Police Officer Randolph Holder and his partner, responded to a 911 call of shots fired. Upon arrival, Police Officer Holder observed the perpetrator fleeing from the scene. As Police Officer Holder heroically approached the armed perpetrator, the perpetrator suddenly turned and discharged his weapon, striking and causing the death of Police Officer Holder. Shortly thereafter, the gunman was apprehended and was charged with first degree murder.

Police Officer Holder was sworn in as a New York City Police Officer in July 2010. Immigrating to the United States in November 2002, to live with his father, Police Officer Holder pursued his lifelong dream of becoming a Police Officer. He followed in his father and grandfather's footsteps, both of whom were Police Officers in his native Guyana.

Police Officer Holder is survived by his father Randolph and stepmother Princess. He held an Associate's Degree in Management. Police Officer Holder was laid to rest in his native country of Guyana. On October 28, 2015, during his funeral, Police Commissioner William J. Bratton posthumously promoted Police Officer Holder to Detective First Grade.

## Appendix B – Historical Data 1971-2015

### Officers Shot and Injured by Subjects, 1971-2015

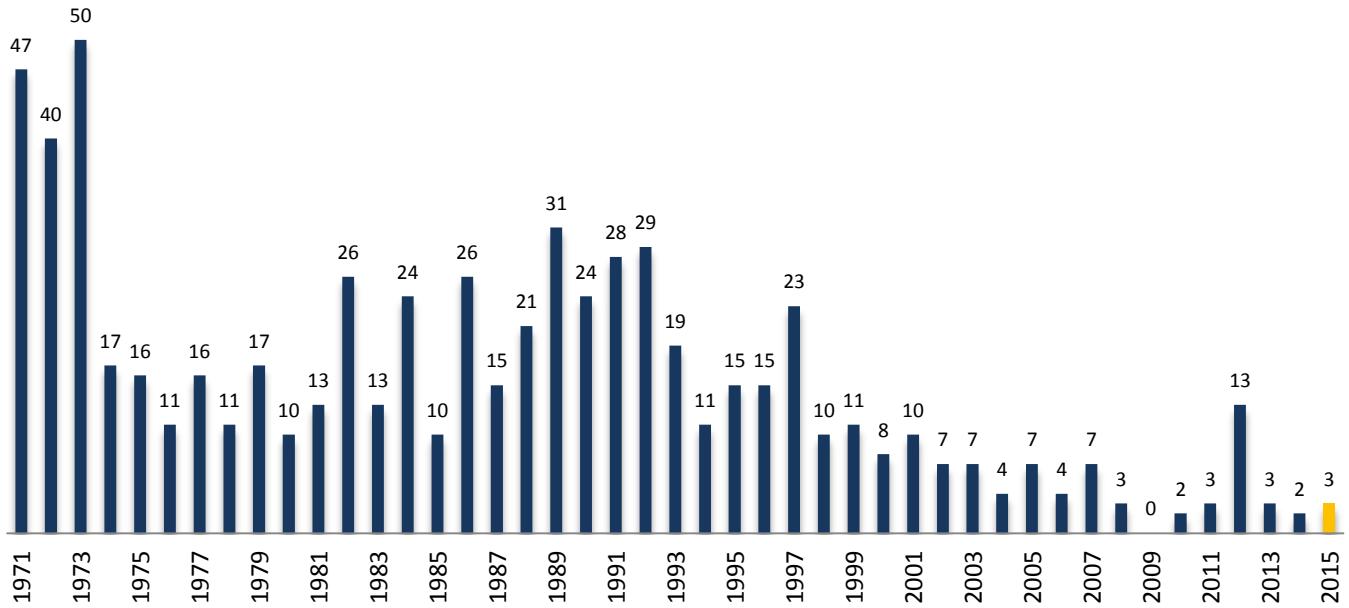


Figure 41

### Officers Shot and Killed by Subjects, 1971-2015

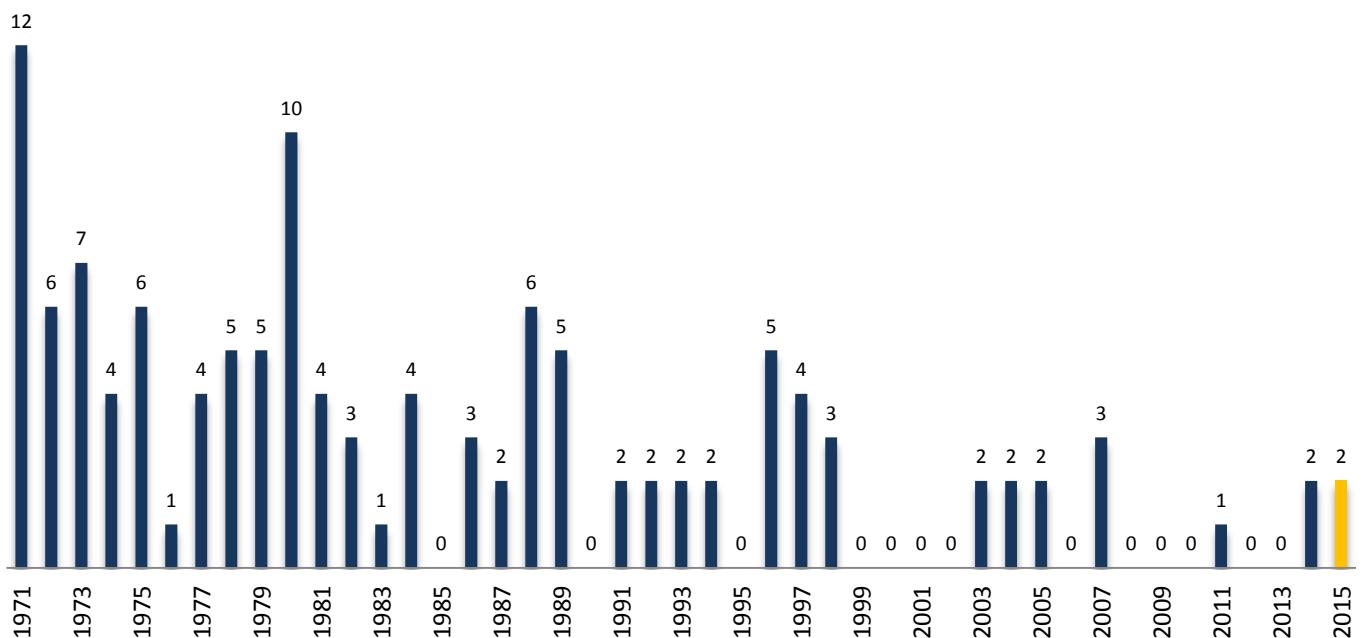


Figure 42

## Subjects Shot and Injured by Officers, 1971-2015

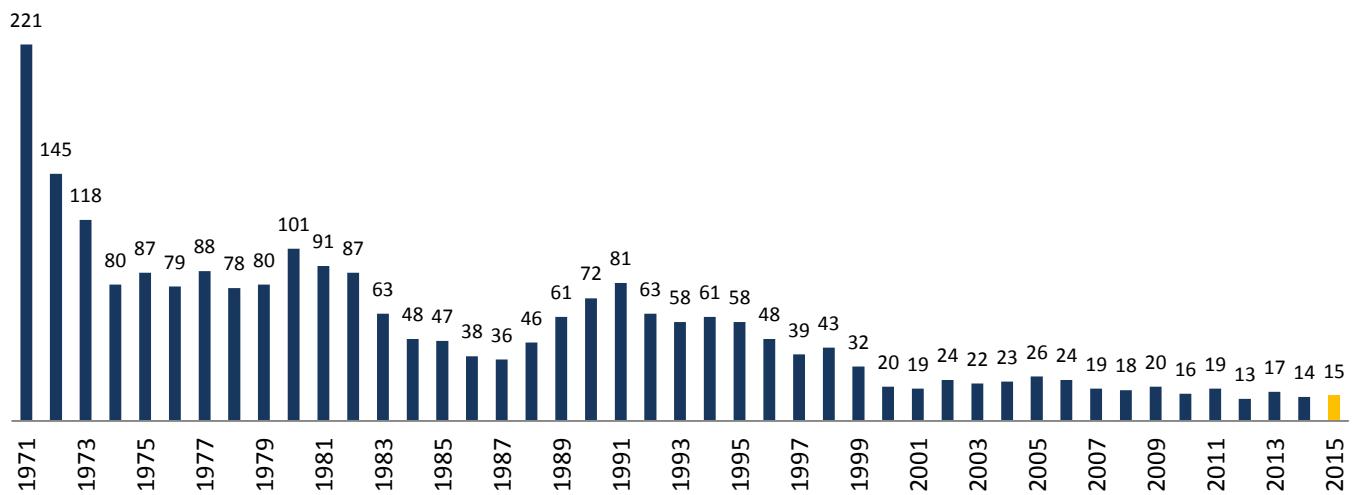


Figure 43

## Subjects Shot and Killed by Officers, 1971-2015

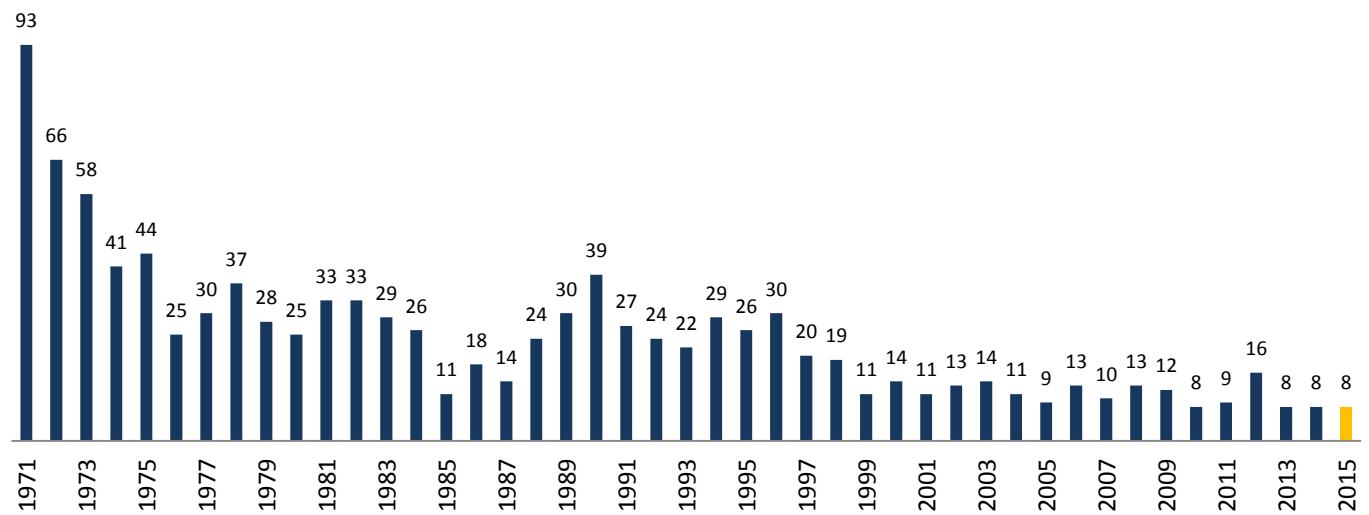


Figure 44

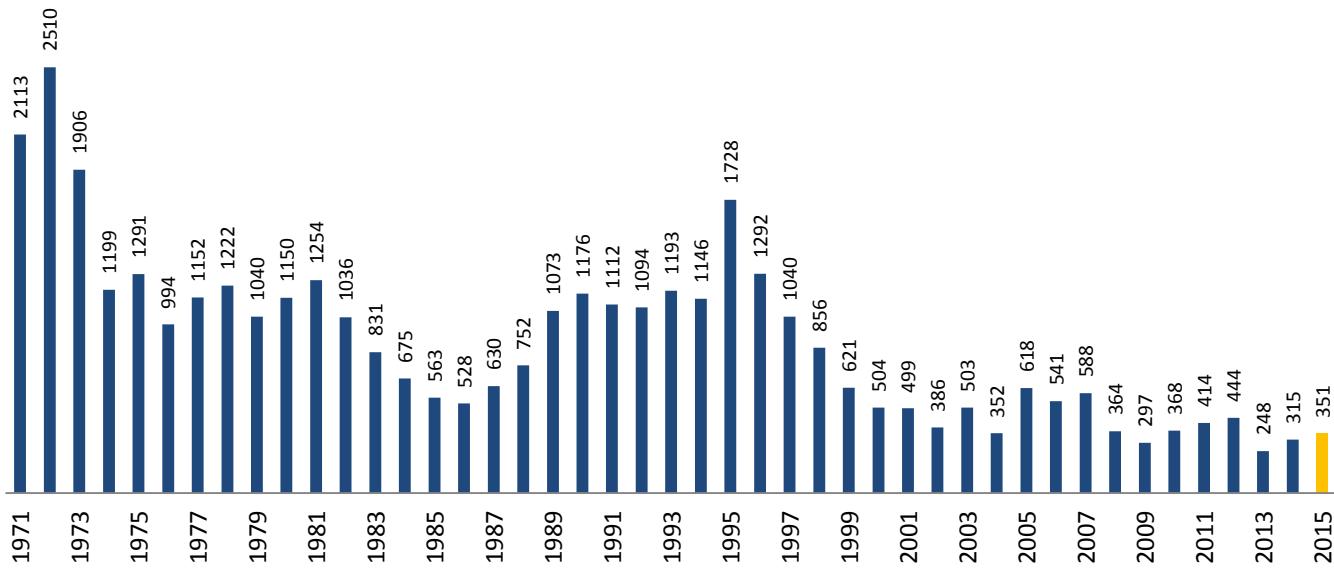
**Total Shots Fired, 1971-2015**

Figure 45

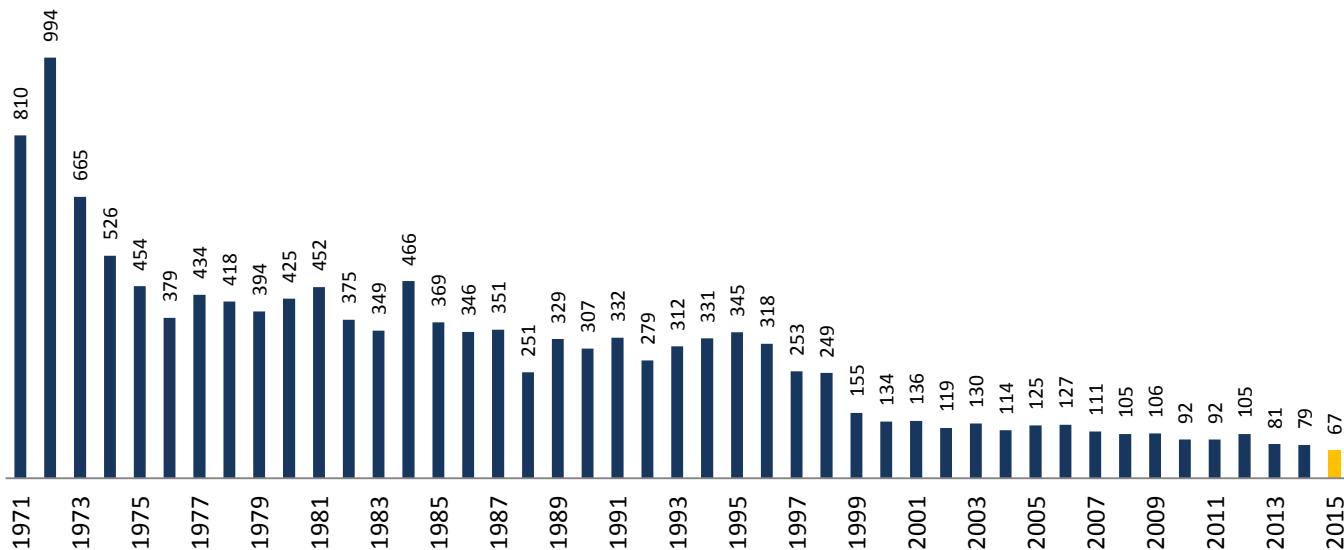
**Total Shooting Incidents involving Officers, 1971-2015**

Figure 46

## Appendix C: Firearms Training

### Overview

NYPD firearms training emphasizes that the ultimate goal of every police officer is to protect life. This means all lives: those of bystanders, victims, subjects, and other officers. One of the realities of police work, however, is the contradiction that can arise when it becomes necessary to protect life by using deadly physical force.

According to the New York State Penal Law, and in keeping with the Patrol Guide restrictions delineated previously in this Report, an officer may use deadly physical force when he or she has probable cause to believe that such force is necessary to protect the officer or other persons present from imminent death or serious physical injury. This includes instances in which a subject is in possession of an object that, because of its appearance and the manner in which the subject holds or uses it, gives the officer a reasonable belief that the object is capable of imminently causing death or serious physical injury.

### Shoot to Stop

Once an officer has determined that deadly physical force is warranted and necessary, the goal of using such force is not to kill, but to stop. Police officers are trained to use deadly physical force to “stop the threat” – i.e., to end the subject’s ability to threaten imminent death or serious physical injury to the officer or another person. If, for example, a missed shot nevertheless causes a subject to cease and desist, then that one errant round is all that is necessary. If a subject is injured and surrenders, then shooting to stop has been accomplished. But sometimes the only means of stopping a subject is one that results in the subject’s demise. Stated explicitly, however, police officers do not “shoot to kill” – they are trained to shoot to stop.

### Weapons Control

NYPD firearms training also emphasizes weapons control. With regard to shooting technique, the mechanics of pistol shooting in a controlled environment include proper grip, sight alignment, sight picture, trigger control, and breath control. All of these require a degree of concentration and fine motor skills, both of which are unfortunately the first factors impacted in a combat scenario. Training can mitigate this, but officers must be taught to rely on mechanical actions that employ gross motor skills and have as few components as possible.

## NYPD Pistols

There are three semi-automatic 9mm pistol models that are authorized as on-duty service weapons for NYPD officers: the Glock 19, the Sig Sauer P226, and the Smith & Wesson 5946. These weapons are equipped with 15 round magazines, and, with one round in the chamber, each firearm is capable of holding 16 total rounds. Additionally, there are several weapons authorized for off-duty carry, such as the Glock 26, the Smith & Wesson 3914, the Smith & Wesson 3953, the Sig Sauer P239, and the Beretta 8000D Mini Cougar. Some officers carry .38 caliber revolvers. These officers are senior members whose weapons have been grandfathered in; revolvers have not been issued as service weapons since 1992. Current NYPD service pistols are all “double action only,” meaning they have a two-stage trigger pull for each round fired (unlike single-action weapons, which can be “cocked,” resulting in a one-stage trigger pull). Additionally, all NYPD weapons are modified to have a heavier-than-stock 12 pound trigger pull; this diminishes the likelihood of unintentional discharges. The NYPD uses a 124-grain, hollow-point bullet that is designed to prevent over-penetration and ricochets.

Because combat stress can contribute to the impairment of fine motor skills, and because of the relative imprecision of pistols, police officers are taught to shoot for center mass – usually, the torso. In cases in which a subject uses cover and presents only a portion of his or her body, officers are trained to use the geometric center of the exposed portion as a target.

The human body’s center mass is the largest area available as a point of aim. The torso represents approximately one third of a human’s surface area, compared to nine percent for an arm or 18 percent for a leg. The torso is also the most stationary portion of the body; extremities are much smaller and less static and therefore are a far less certain target. Additionally, shooting a subject in an extremity is far less likely to stop him or her than a shot to center mass. A leg wound, for example, does little to prevent a subject from continuing to use a knife or gun (see Figure 47).



Figure 47

## Appendix D: Subjects Killed During ID-AC Incidents

### Incident 1

On Wednesday, April 22, 2015, at approximately 2120 hours, six officers responded to a radio run at 168-02 Hillside Avenue within the confines of the 103<sup>rd</sup> precinct. A male perpetrator was involved in an altercation inside of the location which resulted in the discharge of one round into the ceiling of the location. Shortly thereafter the perpetrator verbally ordered seven individuals at gunpoint to extricate themselves from the location. Six 9-1-1 calls were placed in regard to the incident and multiple police units responded. The perpetrator was observed by responding officers to be in possession of a firearm. After the officers issued verbal commands to drop the weapon, the perpetrator proceeded to flee on foot. Two officers exited their vehicles and attempted to approach the subject. During the foot pursuit, the perpetrator fired at the pursuing officers and continued to point his firearm in their direction. Both officers discharged their firearms, striking the armed perpetrator twice. The injured perpetrator was removed to Jamaica Hospital, where he was pronounced deceased. A loaded Glock, 9mm Pistol was recovered on scene. Subject toxicology revealed the presence of alcohol.

### Incident 2

On Saturday April 25, 2015, at approximately 1337 hours, an individual known to the Department was wanted in regard to an I-Card investigation involving a robbery. Two detectives assigned to the 26<sup>th</sup> Precinct Detective Squad arrived at 538 East 6<sup>th</sup> Street, the East Village Halfway House, with the intention of arresting the subject. Detectives arrived at the location, and with the assistance of a civilian security guard, proceeded to the subject's room. The East Village Halfway House offers shelter to ex-prisoners diagnosed with mental disorders. The civilian security guard gained access to the apartment, and as the detectives entered, they observed the subject fleeing out of the window and down the rear fire escape. The detectives pursued, via the inside stairwell and confronted the subject in the rear courtyard of the building. A violent struggle ensued between the detectives and the wanted subject which lasted a minimum of three minutes and thirty seconds. Video surveillance captured a portion of the physical altercation. One round was discharged by one of the involved detectives, striking the individual in his chest and ultimately resulting in his demise. No weapons were recovered on scene. Both detectives were removed to the hospital to treat significant lacerations to their heads as well as other bodily injuries. One detective was admitted for observation. Subject toxicology yielded no presence of narcotics or alcohol.

### Incident 3

On Tuesday, May 26, 2015, at approximately 0558 hours, a perpetrator wanted for murder in Queens County was confronted by a Sergeant, Detective, and Police Officer from the Warrant Squad in the rear of 875 Pennsylvania Avenue within the confines of the 75<sup>th</sup> precinct. Hours earlier, the perpetrator fatally

shot a female victim in the confines of the 106<sup>th</sup> precinct. The officers from the Warrant Squad, working in conjunction with the Technical Assistance Response Unit (TARU) were able to ascertain the perpetrator's physical location through his cellphone. The officers approached the perpetrator's vehicle and, when attempting to exit their vehicle, were fired upon by the perpetrator. The perpetrator had discharged rounds from inside of his vehicle in the direction of the officers and then exited his vehicle continuing to discharge his firearm. All three officers returned fire and struck the perpetrator multiple times, resulting in his demise. A .380 caliber handgun was recovered at the scene next to the perpetrator's body. Subject toxicology yielded the presence of ephedrine and phenylpropanolamine.

#### **Incident 4**

At approximately 0814 hours on Wednesday, June 10, 2015, four officers responded to a 9-1-1 call about a man with a firearm at 2000 Valentine Avenue within the confines of the 46<sup>th</sup> precinct. The officers immediately conducted a canvass and were apprised of additional information by the radio dispatcher; they learned that the perpetrator was inside of Apartment 405. The officers were able to look into the apartment and observed the perpetrator sticking his head out of a bedroom. The officers entered the apartment and issued multiple verbal commands to the perpetrator to show his hands. After hearing screams for help from a female, the officers entered the bedroom and observed the perpetrator holding a firearm and pointing it toward the female's midsection. Additional commands were given to the perpetrator to drop the firearm; suddenly, the perpetrator swung his arm to point his firearm in the direction of the Officers. At this time, the female was able to break free. One Police Officer and one Sergeant discharged their firearms at the perpetrator, striking him multiple times. A Taurus .38 caliber revolver was recovered from the perpetrator's right hand. The perpetrator succumbed to his injuries. Subject toxicology yielded no presence of narcotics or alcohol.

#### **Incident 5**

At approximately 1317 hours on Thursday, June 18, 2015, a police officer assigned to Transit District 34 was assigned to the Q-Line at Ocean Parkway within the confines of the 60<sup>th</sup> Precinct. The officer was advised of an assault in progress and observed the suspect fleeing from the location. After a short foot pursuit, the officer engaged the perpetrator at Seabreeze Avenue and West 1<sup>st</sup> Street. The perpetrator violently resisted arrest, produced a large knife and stabbed the police officer in the right shoulder, causing a laceration. The police officer stepped back from the perpetrator and discharged two rounds from his service weapon, striking and stopping the perpetrator's advance. The officer's rounds struck the perpetrator in the chest, resulting in his demise. A large knife was recovered at the scene, directly in front of the deceased. The officer was removed to the hospital and admitted for his injuries. Subject toxicology revealed the presence of alcohol.

## Incident 6

At approximately 1150 hours, on Saturday, August 14, 2015, members of the Regional Fugitive Task Force, consisting of four NYPD Detectives and four United State Marshals, were seeking to execute a federal probation and weapons possession warrant on a subject at 15 Destiny Court in the confines of the 121<sup>st</sup> Precinct. Upon arrival, entry into the location was made by the Regional Fugitive Task Force. The team was overcome by smoke that was emanating from a container on the floor inside the apartment. Detectives called out to an individual observed inside to exit location but received no response, leading them to tactically withdraw from inside the location due to the smoke condition. The team placed a call for additional units and FDNY to respond. FDNY responded to the scene and was informed by members of the Regional Fugitive Task Force that a wanted fugitive was believed to be inside the location. A Lieutenant from the FDNY entered the location in an attempt to assist the individual inside. Gunshots were fired a short time later from within the location, striking the FDNY Lieutenant causing a gunshot wound to his leg. The Lieutenant was removed to the hospital and additional officers were called to the scene to assist. The Emergency Service Unit secured the perimeter of the location and the Hostage Negotiation Unit established contact with the perpetrator. Social media revealed that the perpetrator had made statements including, "Today I die." The Hostage Negotiation Unit engaged in conversation with the perpetrator for over six hours resulting in the perpetrator stating he was going to exit the location. Shortly thereafter, Emergency Service members were fired upon by the perpetrator who was armed with a fully automatic AK-47. The perpetrator had begun to fire through the windows of the location and then opened the rear door in an attempt to exit, all the while continuing to fire his weapon. Seven members of the Emergency Service Unit returned fire, striking the perpetrator multiple times resulting in his demise. No injuries were sustained to members of the Department. Three additional firearms were recovered from inside of the location. Subject toxicology revealed the presence of cocaine.

## Incident 7

At approximately 2230 hours, on Monday, December 7, 2015, an off-duty police officer agreed to meet an individual regarding a vehicle listed for sale on Craigslist. Communication between the police officer and the individual was conducted through text messaging. The police officer arrived at 177-39 145<sup>th</sup> Avenue within the confines of the 105<sup>th</sup> Precinct and was met by two individuals, one of whom placed a firearm to the officer's back and removed his wallet. The other individual attempted to remove additional items and discovered the officer's Department issued shield on his waist band. This perpetrator fled the scene in a vehicle, while the other continued to brandish a firearm and point it in the direction of the officer. At this time, the police officer drew his weapon and discharged five rounds, striking the armed perpetrator four times. The officer called 9-1-1 on his cellphone and requested additional units and medical attention for the injured perpetrator. The perpetrator was removed to the hospital, where he succumbed to his injuries. A pellet gun was recovered near the perpetrator. Subject toxicology is still pending.

**Incident 8**

On Tuesday, December 12, 2015, an on-duty police officer observed a motor vehicle in violation of the New York State Vehicle and Traffic Law. Upon activating their emergency lights to conduct a car stop, the vehicle accelerated, striking another vehicle. The driver of the vehicle fled on foot, and was approached by a police officer. The perpetrator attempted to grab the officer's firearm. During the altercation the officer discharged one round striking the perpetrator in the chest, which led to his demise. The passenger in the vehicle was apprehended on scene. The subject had 16 prior arrests including multiple arrests for Burglary and had previous charges of resisting arrest and fleeing from the police. Subject toxicology yielded no presence of narcotics or alcohol.

## Appendix E – Subject Injury & Race

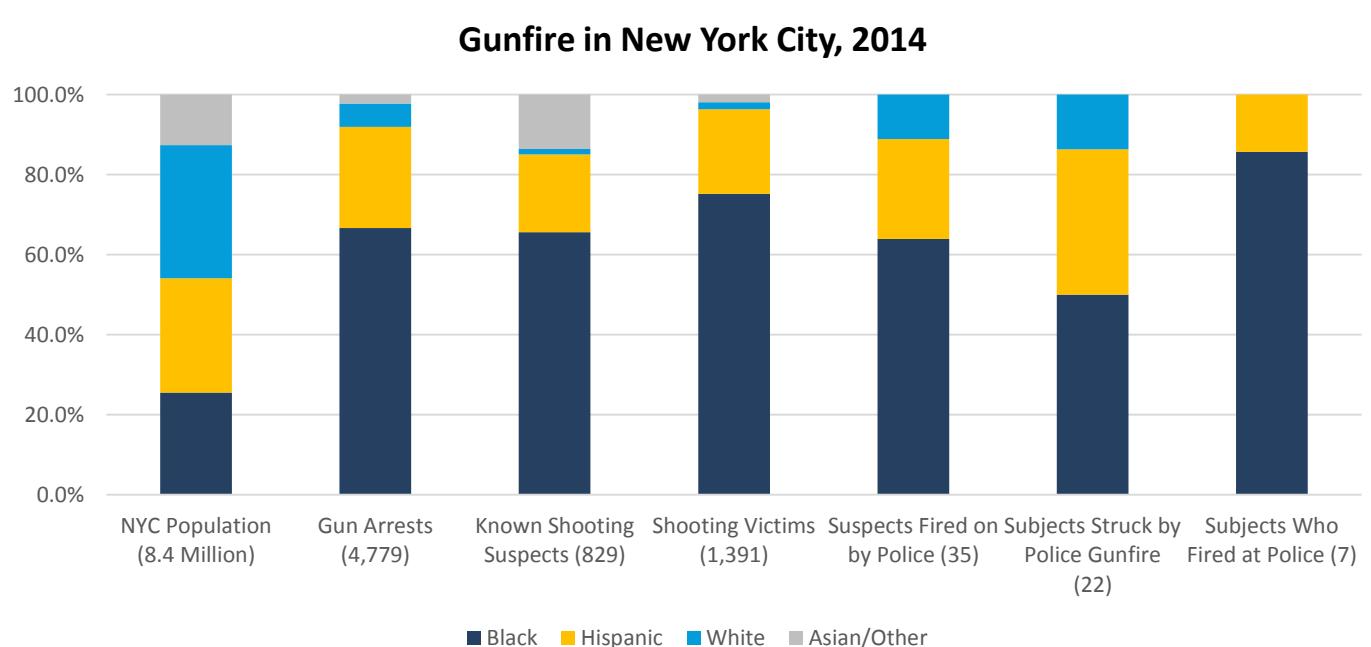
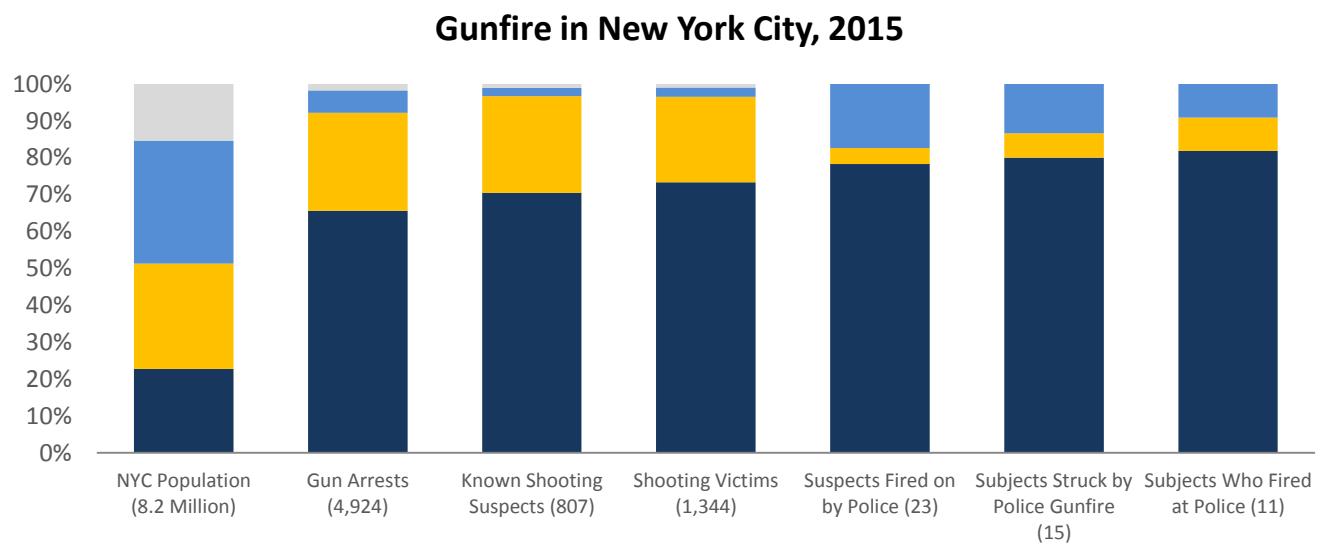


Figure 48

Subjects Wounded by Officers, 2010-2015					
Year	White	Black	Hispanic	Asian	Total
2010	3	9	3	1	16
2011	2	10	7	0	19
2012	1	9	3	0	13
2013	1	12	4	0	17
2014	0	8	6	0	14
2015	2	12	1	0	15

Figure 49

Subjects Killed by Officers, 2010-2015					
Year	White	Black	Hispanic	Asian	Total
2010	2	1	4	1	8
2011	4	2	3	0	9
2012	2	11	2	1	16
2013	0	6	2	0	8
2014	2	4	2	0	8
2015	2	6	0	0	8

Figure 50

## Appendix F – Incident Breakdown Tables

Firearms Discharge Incidents by Day, 2015					
Day	ID-AC	ID-AA	Unintentional	Unauthorized	Total
Monday	3	1	0	1	5
Tuesday	7	1	3	0	11
Wednesday	8	4	4	1	17
Thursday	2	4	1	0	7
Friday	8	1	2	0	11
Saturday	4	4	3	0	11
Sunday	1	0	2	2	5
<b>Total</b>	<b>33</b>	<b>15</b>	<b>15</b>	<b>4</b>	<b>67</b>

Figure 51

Firearms Discharge Incidents by Month, 2015					
Month	ID-AC	ID-AA	Unintentional	Unauthorized	Total
January	4	1	4	0	9
February	0	2	1	0	3
March	3	1	1	1	6
April	2	3	2	2	9
May	3	0	1	0	4
June	6	0	0	0	6
July	1	2	1	0	4
August	3	1	2	0	6
September	2	0	1	0	3
October	2	2	0	0	4
November	3	1	2	0	6
December	4	2	0	1	7
<b>Total</b>	<b>33</b>	<b>15</b>	<b>15</b>	<b>4</b>	<b>67</b>

Figure 52

Firearms Discharge Incidents by Borough, 2015					
Borough	ID-AC	ID-AA	Unintentional	Unauthorized	Total
Brooklyn	17	6	3	1	27
Bronx	3	2	1	0	6
Manhattan	5	0	5	0	10
Queens	3	6	4	0	13
Staten Island	2	0	2	0	4
Outside City	3	1	0	3	7
<b>Total</b>	<b>33</b>	<b>15</b>	<b>15</b>	<b>4</b>	<b>67</b>

Figure 53

Firearms Discharge Incidents by Precinct, Manhattan, 2015					
Precinct	ID-AC	ID-AA	Unintentional	Unauthorized	Total
<b>1st Precinct</b>	0	0	0	0	<b>0</b>
<b>5th Precinct</b>	0	0	0	0	<b>0</b>
<b>6th Precinct</b>	0	0	1	0	<b>1</b>
<b>7th Precinct</b>	1	0	0	0	<b>1</b>
<b>9th Precinct</b>	1	0	1	0	<b>2</b>
<b>10th Precinct</b>	0	0	0	0	<b>0</b>
<b>13th Precinct</b>	0	0	0	0	<b>0</b>
<b>Midtown South</b>	1	0	0	0	<b>1</b>
<b>17th Precinct</b>	0	0	0	0	<b>0</b>
<b>Midtown North</b>	0	0	0	0	<b>0</b>
<b>19th Precinct</b>	0	0	0	0	<b>0</b>
<b>20th Precinct</b>	0	0	0	0	<b>0</b>
<b>Central Park</b>	0	0	0	0	<b>0</b>
<b>23rd Precinct</b>	1	0	0	0	<b>1</b>
<b>24th Precinct</b>	0	0	0	0	<b>0</b>
<b>25th Precinct</b>	1	0	0	0	<b>1</b>
<b>26th Precinct</b>	0	0	1	0	<b>1</b>
<b>28th Precinct</b>	0	0	0	0	<b>0</b>
<b>30th Precinct</b>	0	0	1	0	<b>1</b>
<b>32nd Precinct</b>	0	0	1	0	<b>1</b>
<b>33rd Precinct</b>	0	0	0	0	<b>0</b>
<b>34th Precinct</b>	0	0	0	0	<b>0</b>
<b>Total</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>10</b>

Figure 54

Firearms Discharge Incidents by Precinct, Bronx, 2015					
Precinct	ID-AC	ID-AA	Unintentional	Unauthorized	Total
40th Precinct	0	0	0	0	0
41st Precinct	0	0	0	0	0
42nd Precinct	0	0	0	0	0
43rd Precinct	0	0	0	0	0
44th Precinct	0	0	0	0	0
45th Precinct	1	0	0	0	1
46th Precinct	2	1	0	0	3
47th Precinct	0	0	0	0	0
48th Precinct	0	0	0	0	0
49th Precinct	0	0	0	0	0
50th Precinct	0	1	1	0	2
52nd Precinct	0	0	0	0	0
<b>Total</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>6</b>

Figure 55

Firearms Discharge Incidents by Precinct, Brooklyn, 2015					
Precinct	ID-AC	ID-AA	Unintentional	Unauthorized	Total
60th Precinct	1	0	0	0	1
61st Precinct	0	0	0	0	0
62nd Precinct	0	0	0	0	0
63rd Precinct	0	0	0	0	0
66th Precinct	0	0	0	0	0
67th Precinct	2	1	1	0	4
68th Precinct	0	0	0	1	1
69th Precinct	0	0	0	0	0
70th Precinct	1	0	1	0	2
71st Precinct	1	0	0	0	1
72nd Precinct	0	0	0	0	0
73rd Precinct	1	1	0	0	2
75th Precinct	3	1	0	0	4
76th Precinct	0	0	0	0	0
77th Precinct	0	0	1	0	1
78th Precinct	0	0	0	0	0
79th Precinct	2	1	0	0	3
81st Precinct	0	1	0	0	1
83rd Precinct	3	1	0	0	4
84th Precinct	1	0	0	0	1
88th Precinct	2	0	0	0	2
90th Precinct	0	0	0	0	0
94th Precinct	0	0	0	0	0
<b>Total</b>	<b>17</b>	<b>6</b>	<b>3</b>	<b>1</b>	<b>27</b>

Figure 56

Firearms Discharge Incidents by Precinct, Queens, 2015					
Precinct	ID-AC	ID-AA	Unintentional	Unauthorized	Total
100th Precinct	0	1	0	0	1
101st Precinct	0	1	0	0	1
102nd Precinct	0	0	0	0	0
103rd Precinct	0	0	0	0	0
104th Precinct	0	0	0	0	0
105th Precinct	2	1	0	0	3
106th Precinct	0	1	0	0	1
107th Precinct	1	0	1	0	2
108th Precinct	0	0	0	0	0
109th Precinct	0	0	1	0	1
110th Precinct	0	0	0	0	0
111th Precinct	0	0	0	0	0
112th Precinct	0	0	0	0	0
113th Precinct	0	2	0	0	2
114th Precinct	0	0	2	0	2
115th Precinct	0	0	0	0	0
Total	3	6	4	0	13

Figure 57

Firearms Discharge Incidents by Precinct, Staten Island, 2015					
Precinct	ID-AC	ID-AA	Unintentional	Unauthorized	Total
120th Precinct	1	0	0	0	1
121st Precinct	1	0	1	0	2
122nd Precinct	0	0	0	0	0
123rd Precinct	0	0	1	0	1
<b>Total</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>

Figure 58

Firearms Discharge Incidents by Counties, Outside City, 2015					
Precinct	ID-AC	ID-AA	Unintentional	Unauthorized	Total
Suffolk	0	0	0	1	1
Nassau	0	1	0	0	1
Westchester	3	0	0	2	5
Rockland	0	0	0	0	0
<b>Total</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>7</b>

Figure 59

Firearms Discharge Incidents by Location, 2015					
	ID-AC	ID-AA	Unintentional	Unauthorized	Total
Within City	30	14	15	1	60
Outside City	3	1	0	3	7
<b>Total</b>	<b>33</b>	<b>15</b>	<b>15</b>	<b>4</b>	<b>67</b>

Figure 60

Firearms Discharge Incidents by Officer Duty Status, 2015					
Status	ID-AC	ID-AA	Unintentional	Unauthorized	Total
On-Duty	30	13	10	0	53
Off-Duty	3	2	5	4	14
<b>Total</b>	<b>33</b>	<b>15</b>	<b>15</b>	<b>4</b>	<b>67</b>

Figure 61

## 2015 Annual Firearms Discharge Report

ID-AC	TYPE OF THREAT FROM SUBJECT	OFFICERS INVOLVED	SHOTS	HITS	SUBJECTS INVOLVED	SUBJECT GENDER	SUBJECT RACE	SUBJECT AGE	SUBJECT WEAPON
1	FIREARM-SUBJECT FIRED AT OFFICER AFTER BOTH SUBJECTS INVOLVED IN ROBBERY	1	3	1	2	Male	Hispanic	28	Firearm None
2	CUTTING INSTRUMENT- SUBJECT LUNGED AT OFFICER	1	1	1	1	Male	Hispanic	26	Cutting Instrument
3	FIREARM-SUBJECT WITH FIREARM	1	1	1	1	Male	Black	29	Firearm
4	CUTTING INSTRUMENT- SUBJECT WAS STABBING CIVILIAN	1	8	4	1	Male	White	37	Cutting Instrument
5	FIREARM- SUBJECT POINTED A FIREARM AT THE OFFICER	2	1,3	3	1	Male	Black	34	Firearm
6	THREATENED WITH AUTO SUBJECTS INVOLVED IN NARCOTICS SALE	1	1	1	2	Male	Black	36	Blunt Instrument
7	FIREARM- SUBJECT POINTED A FIREARM AT THE OFFICER	1	2	0	1	Male	Black	33	Firearm
8	FIREARM- SUBJECT FIRED AT OFFICERS	2	2,3	2	1	Male	White	30	Firearm
9	SUBJECT ATTACKED OFFICERS	1	1	1	1	Male	Black	24	Physical Force
10	FIREARM-SUBJECT POINTED A FIREARM AT THE OFFICER	1	1	0	1	Male	Hispanic	31	Firearm
11	BLUNT INSTRUMENT-ATTACKED POLICE OFFICER WITH HAMMER	1	4	4	1	Male	Black	30	Blunt Instrument
12	FIREARM-SUBJECT FIRED AT OFFICER	3	16,9,12	14	1	Male	Black	43	Firearm
13	FIREARM-SUBJECT SHOT CIVILIAN	1	2	1	1	Male	Hispanic	28	Firearm
14	FIREARM- SUBJECT POINTED A FIREARM AT THE OFFICER	2	13,14	24	1	Male	Black	19	Firearm
15	CUTTING INSTRUMENT- SUBJECT WITH KNIFE SUBJECTS WERE COMMITTING A LARCENY	1	1	0	2	Male	Black	24	Cutting Instrument
16	FIREARM-SUBJECT FIRED AT OFFICER	2	3,1	0	1	Male	Black	20	Firearm
17	FIREARM-SUBJECT FIRED AT OFFICER	3	2,1,4	0	1	Male	Black	25	Firearm
18	CUTTING INSTRUMENT- SUBJECT STABBED OFFICER	1	2	2	1	Male	White	58	Cutting Instrument
19	FIREARM- SUBJECTS ROBBED & FIRED SHOTS AT OFF DUTY OFFICER	1	4	0	2	Male	Black	22	Firearm
20	FIREARM-SUBJECT FIRED AT OFFICERS	7	9,7,4,7, 2,7,3	3	1	Male	Black	38	Firearm
21	OFFICER PERCEIVED THREAT SUBJECTS WERE COMMITTING A LARCENY	1	1	0	2	Male	Black	16	None
22	FIREARM- SUBJECT ROBBED UNDERCOVER OFFICER CONDUCTING AN INVESTIGATION INTO FIREARMS SALES	1	20	6	3	Male	Black	38	Imitation Firearm
23	FIREARM- SUBJECT FIRED AT OFFICERS	6	16,1,25 ,10,16, 16	1	1	Male	Black	27	Firearm
24	FIREARM- SUBJECT WITH FIREARM	1	2	0	1	Male	Black	N/A	Firearm
25	FIREARM- SUBJECTS FIRED AT OFFICERS	3	5,8,6	1	3	Male	Black	22	Firearm
26	FIREARM-SUBJECT FIRED AT OFFICER	1	10	1	1	Male	Black	30	Firearm
27	FIREARM-SUBJECTS ROBBED PLAINCLOTHES OFFICER	1	1	1	3	Male	Black	16	Imitation Firearm
						Male	Black	17	None

## 2015 Annual Firearms Discharge Report

					Male	Black	21	None
28	FIREARM- SUBJECT WITH FIREARM	1	2	1	1	Male	Black	24
29	OFFICER PERCEIVED THREAT	1	1	1	1	Male	Black	32
30	FIREARM-SUBJECT POINTED A FIREARM AT THE OFFICER	2	1,4	0	2	Male	Black	25
						Male	Black	24
31	FIREARM-SUBJECTS ROBBED OFF DUTY MOS	1	5	4	2	Male	Black	30
						Male	Black	N/A
32	SUBJECT ATTACKED POLICE OFFICER	1	1	1	2	Male	Black	36
						Male	Black	35
33	FIREARM-SUBJECT WITH FIREARM	1	1	1	1	Male	Black	20
								Firearm

Figure 62

New York City Police Department

**James P. O'Neill,  
Police Commissioner**

